TECHNOLOGY DEPT.

Gas Journal

Vol. 271. 104th Year. LONDON, JULY 2, 1952 No. 4618 Price 1/3
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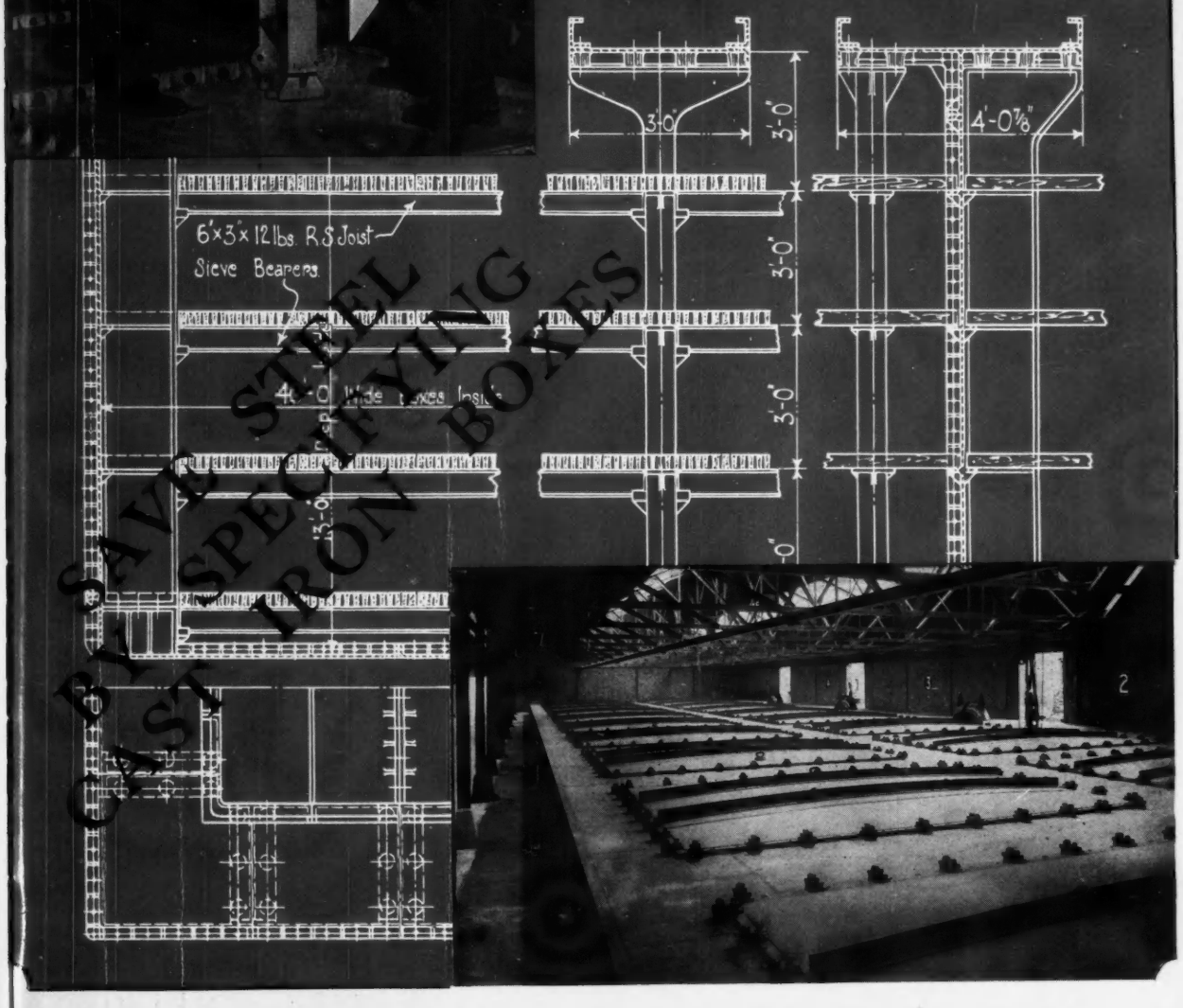

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BY SPECIFYING
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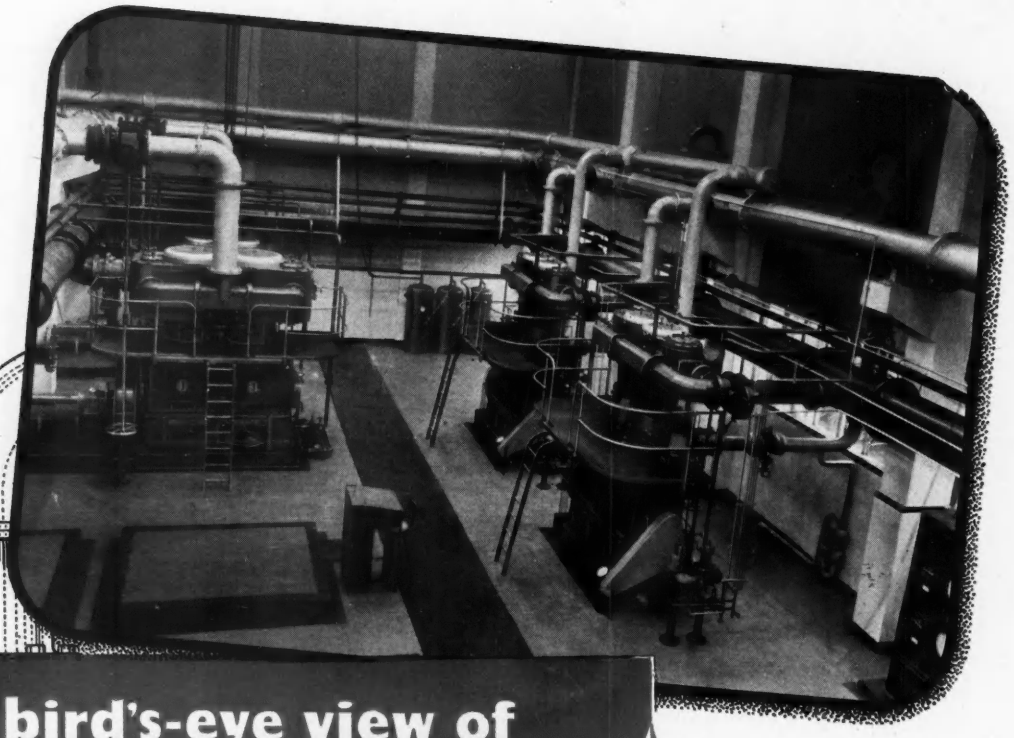

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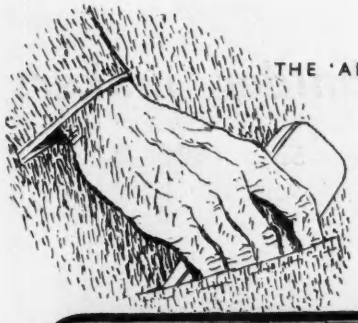

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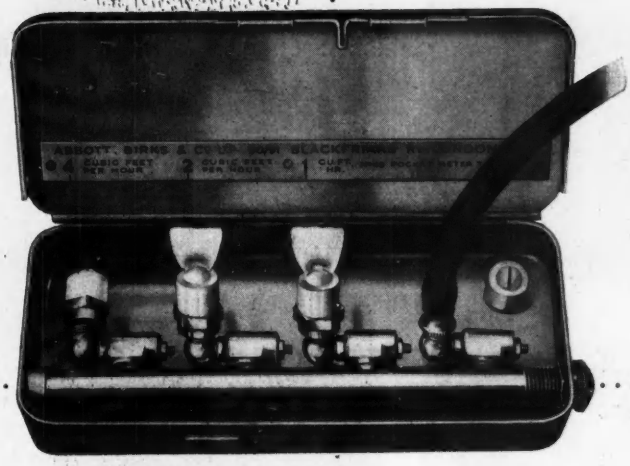
FOR DETECTING (in situ) THE PASSAGE OF UNREGISTERED GAS AT LOW CONSUMPTION



The handy instrument, now in production again, established its value in pre-war days; today, with so many low consumption appliances and pilot lights in use, its importance is greatly enhanced.

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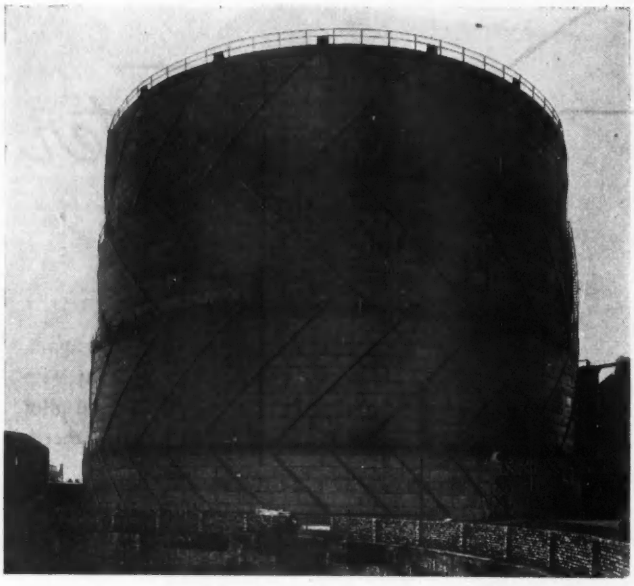

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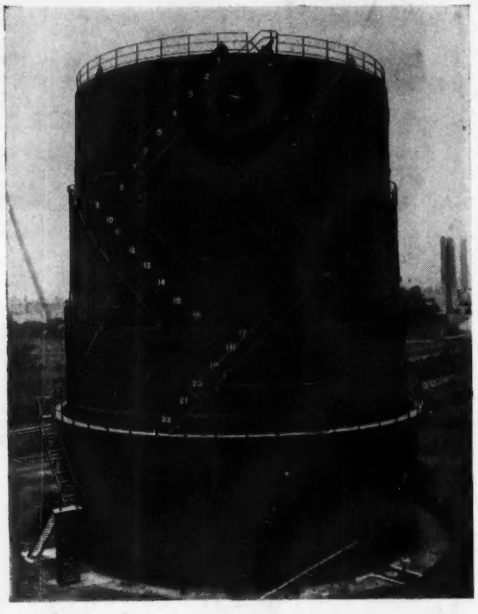

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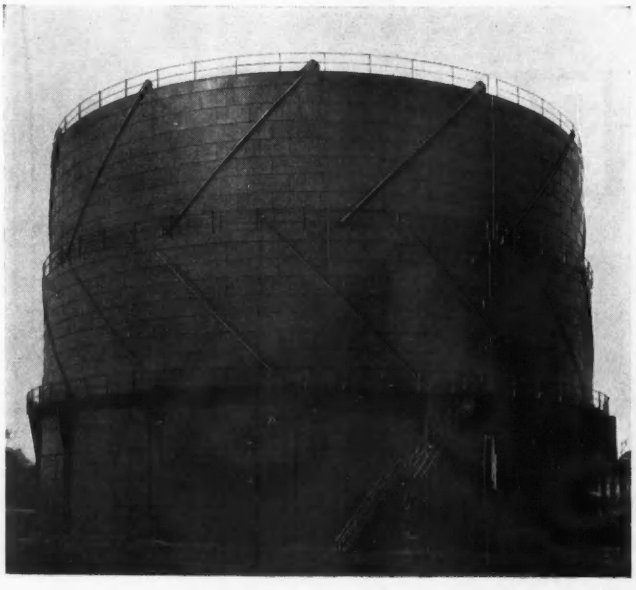

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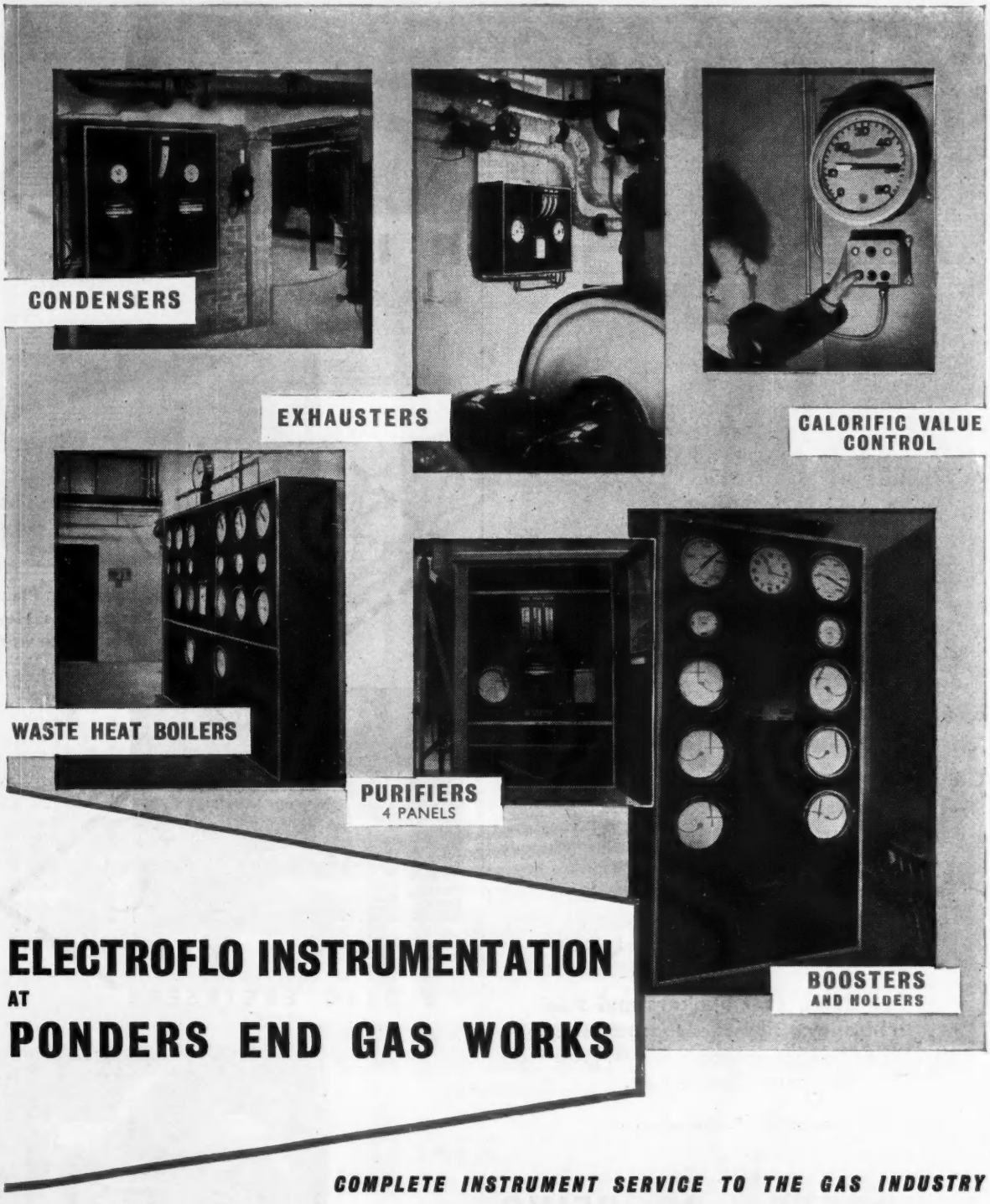

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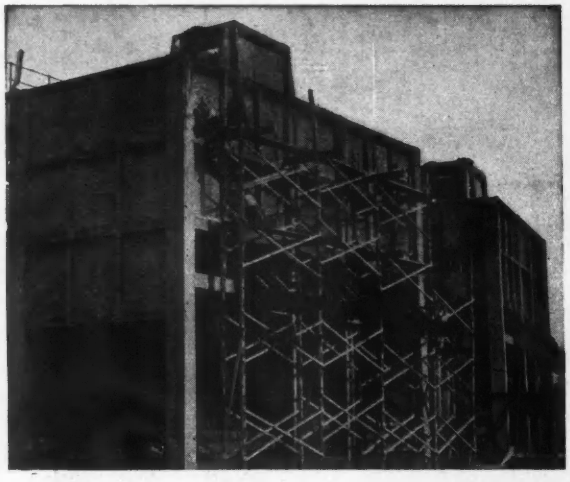

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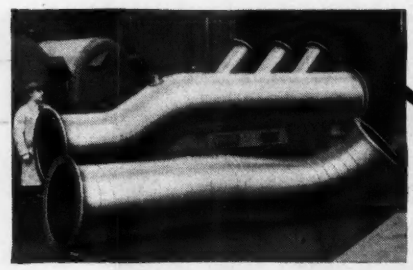

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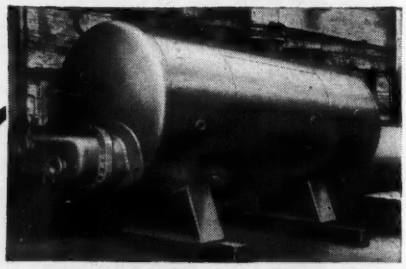

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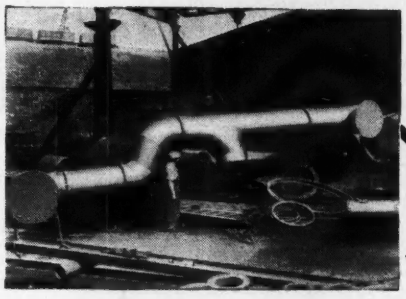

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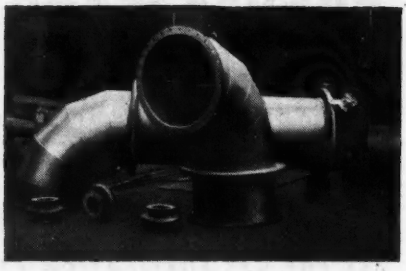

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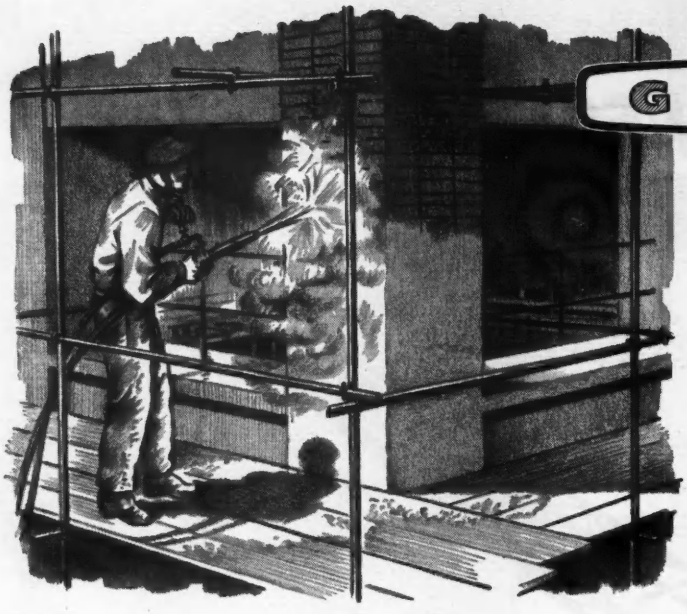

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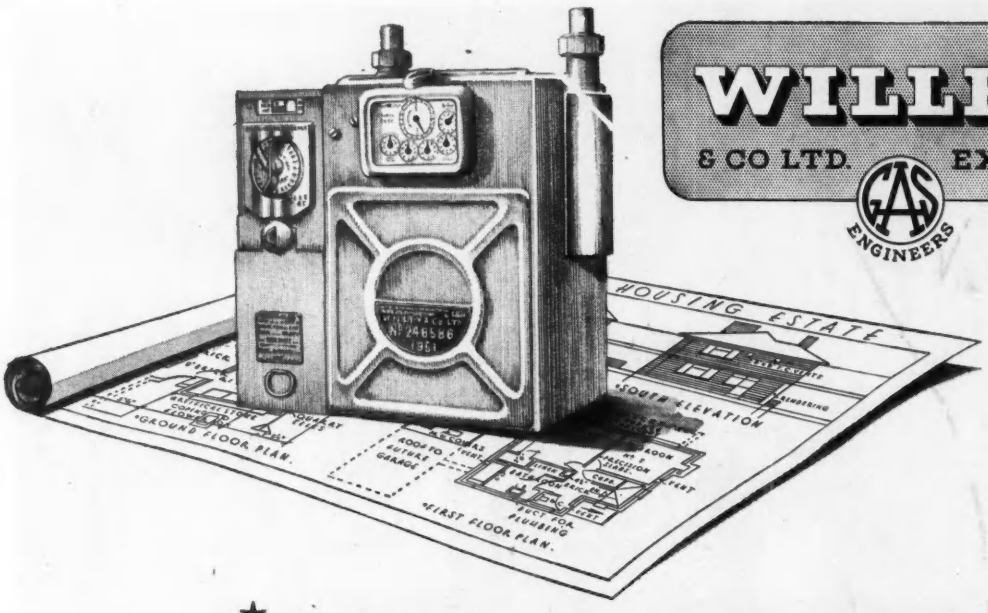

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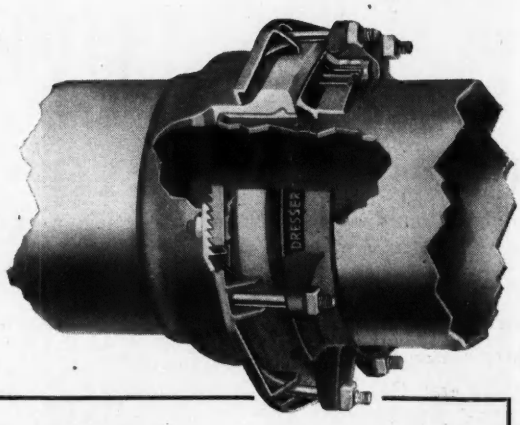

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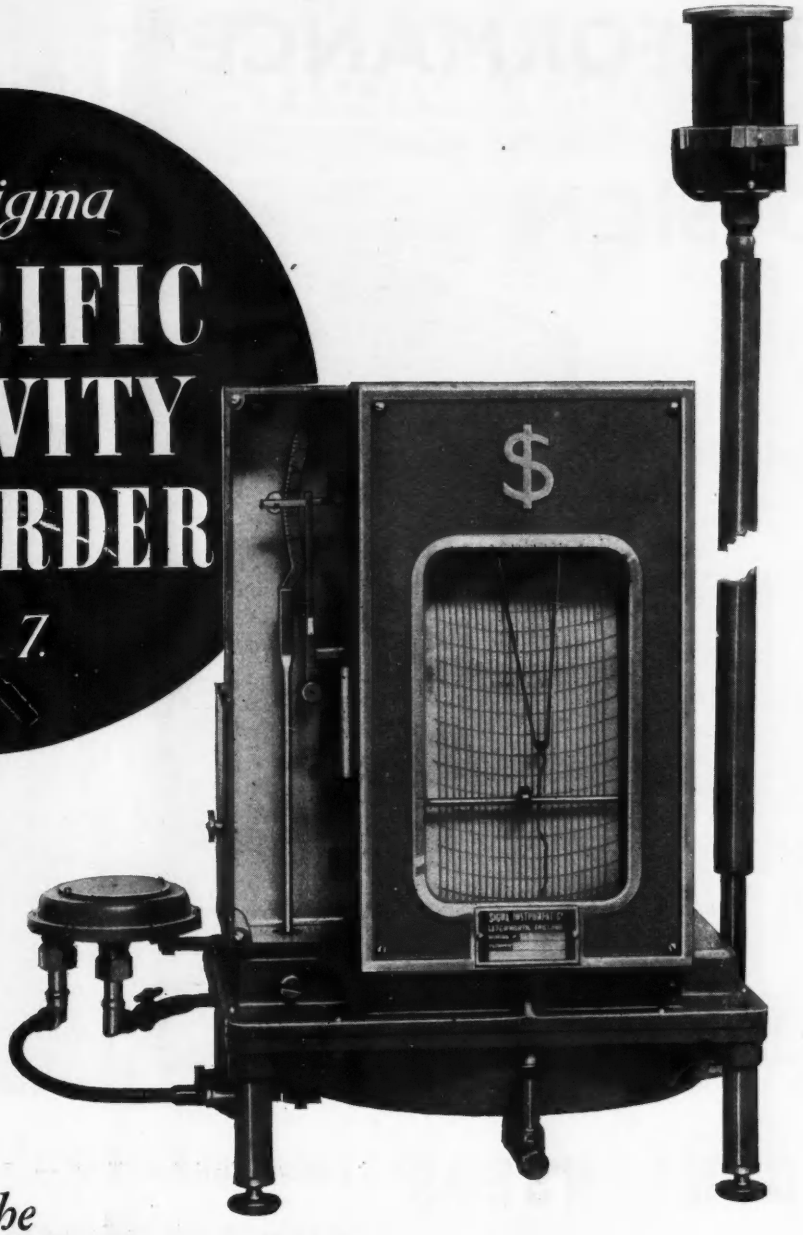

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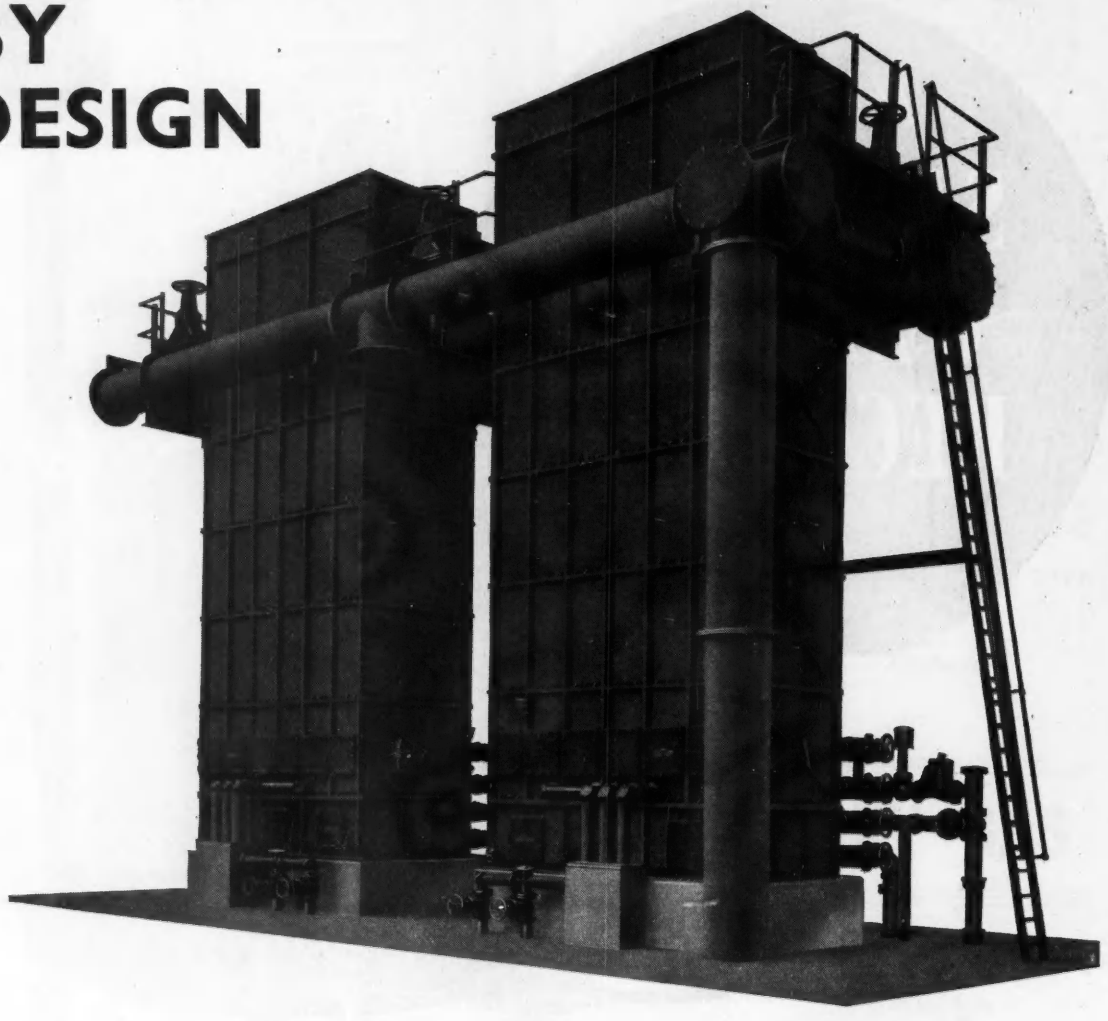

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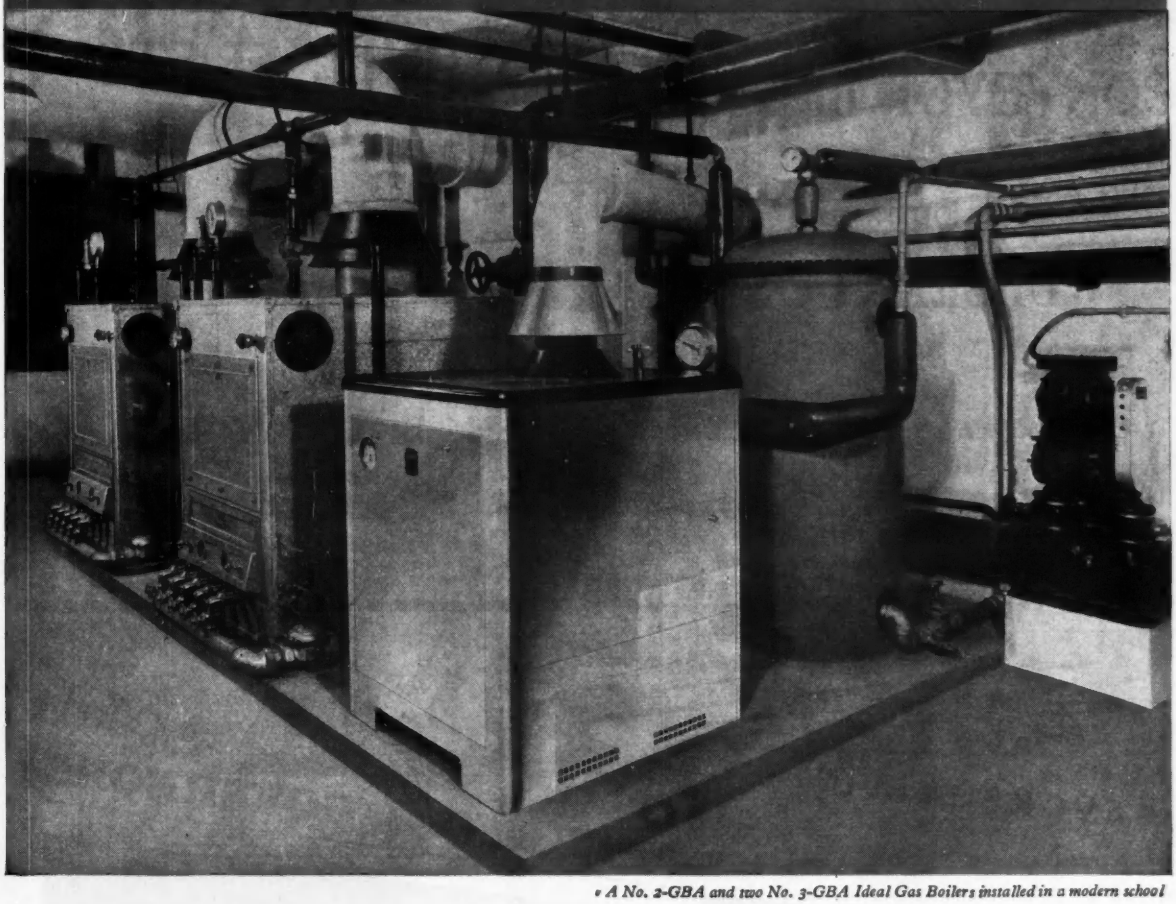

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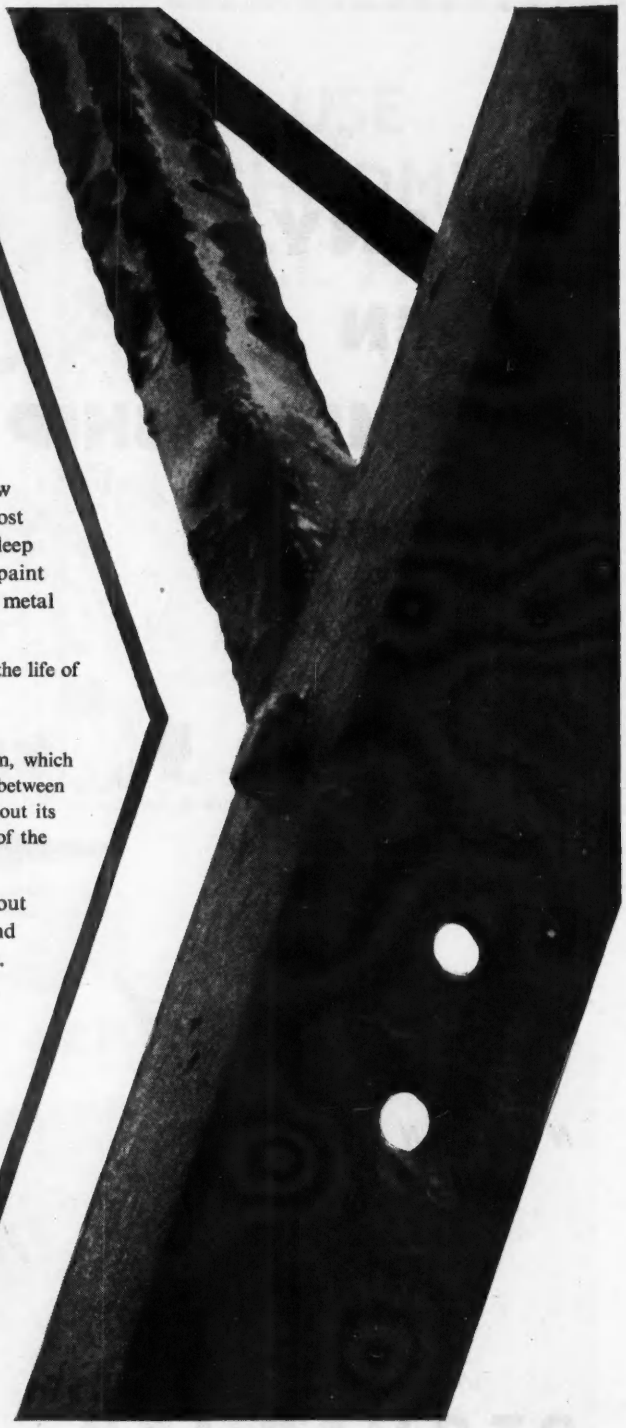

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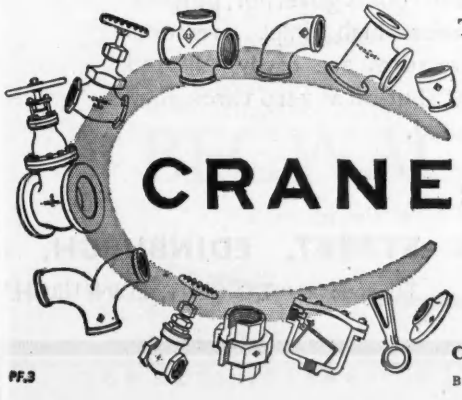

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THE FIGURE 124
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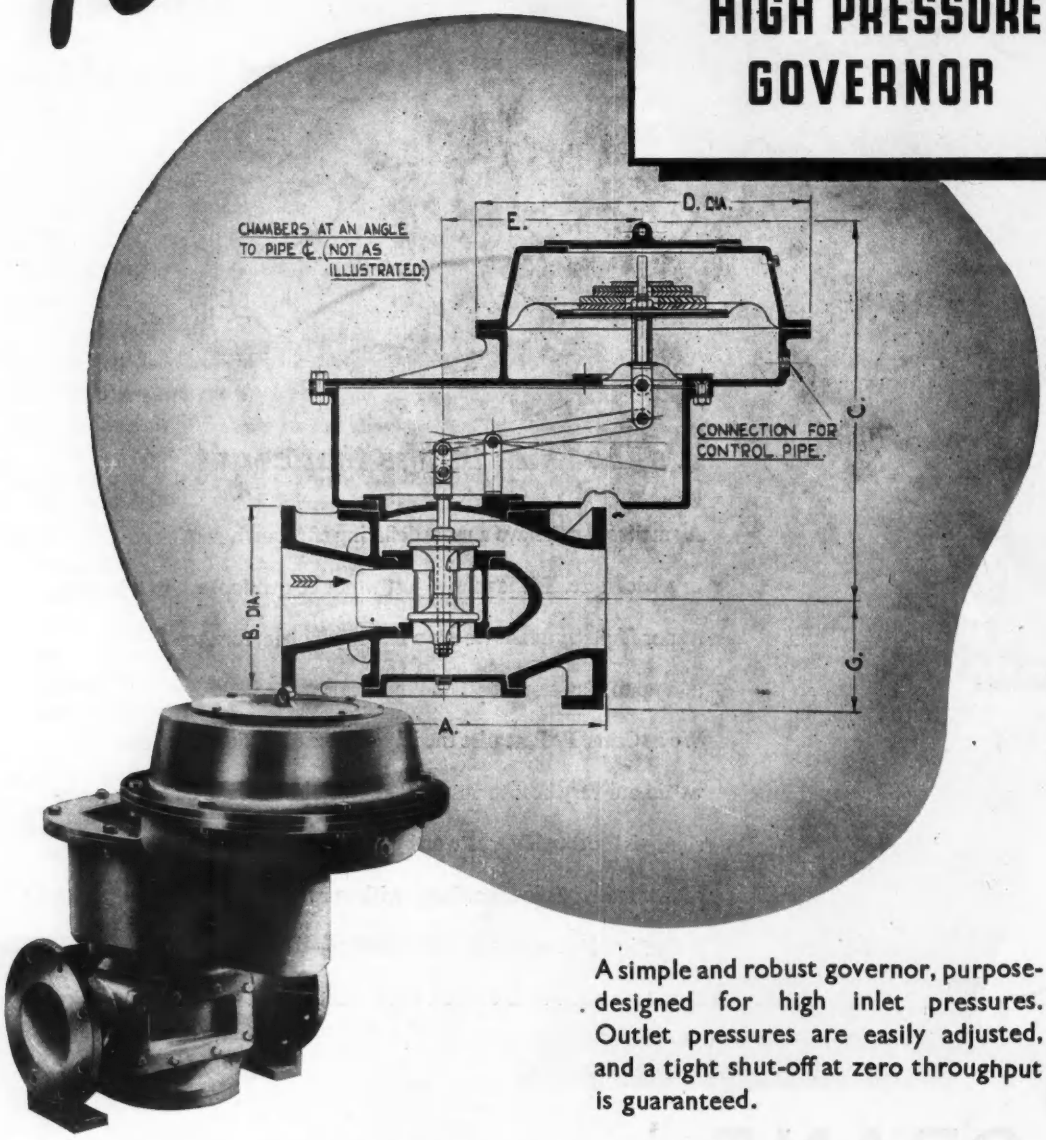

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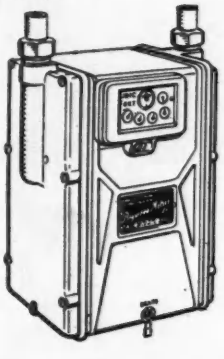

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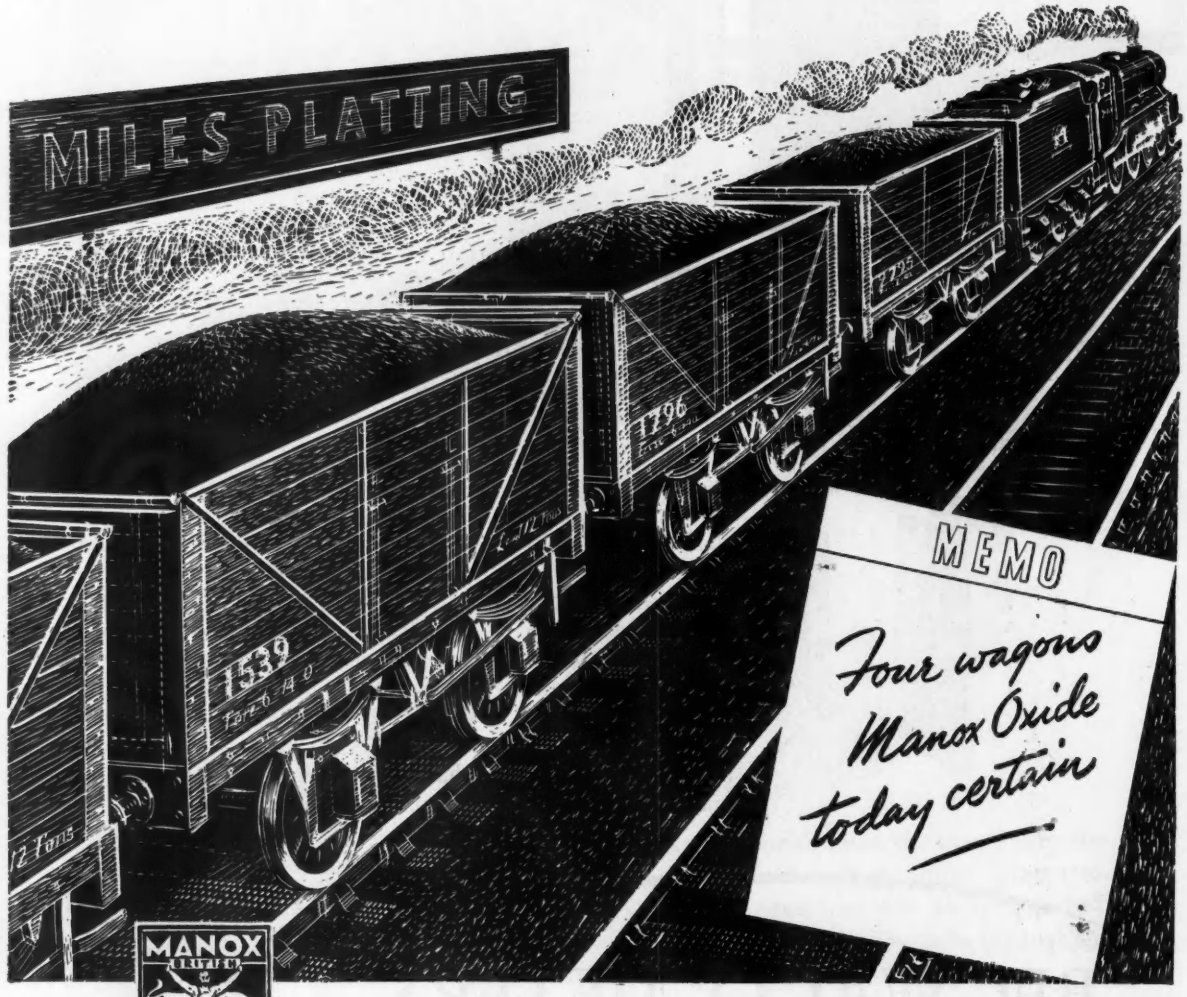

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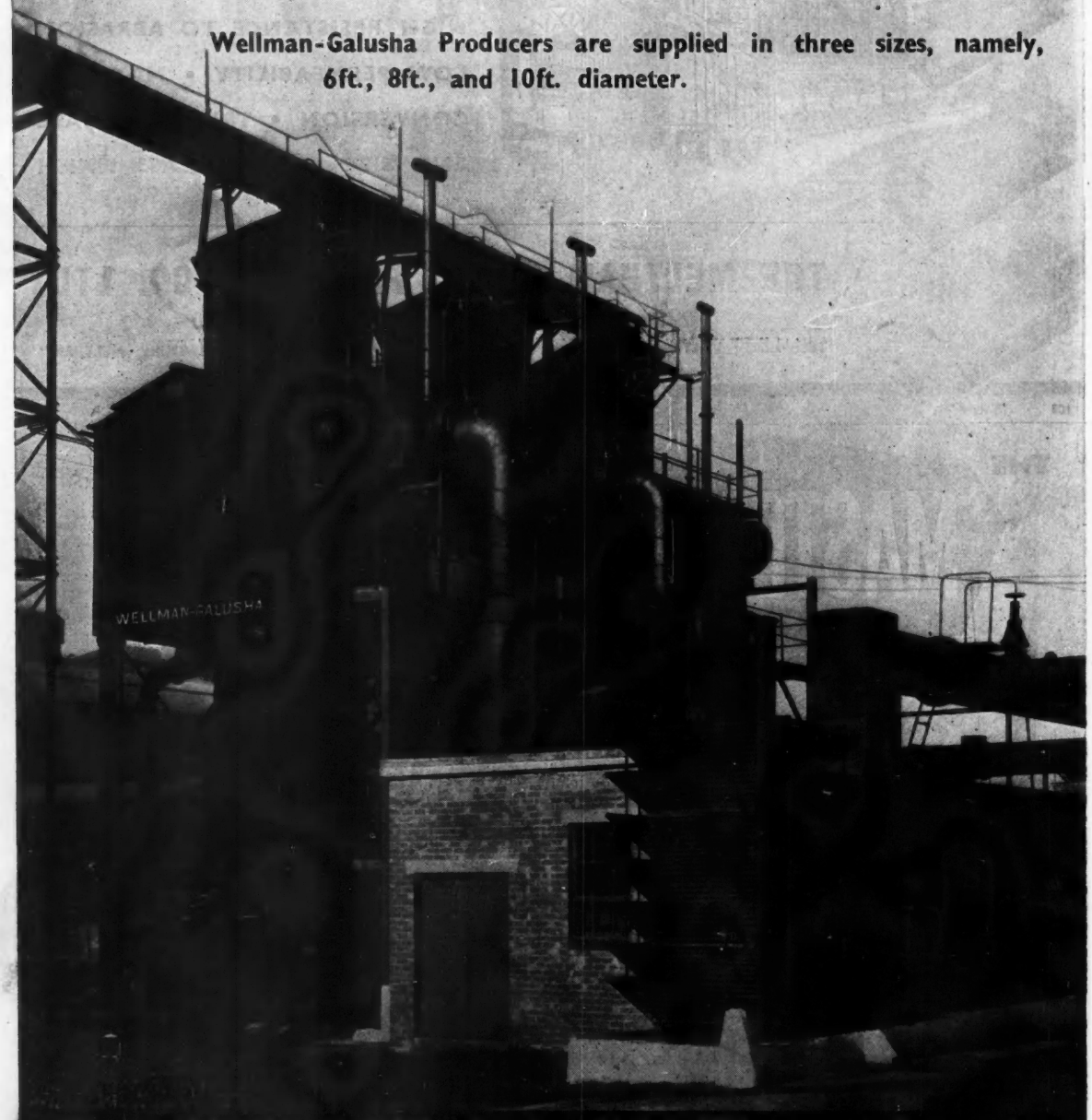
Wellman-Galusha Producers are supplied in three sizes, namely, 6ft., 8ft., and 10ft. diameter.



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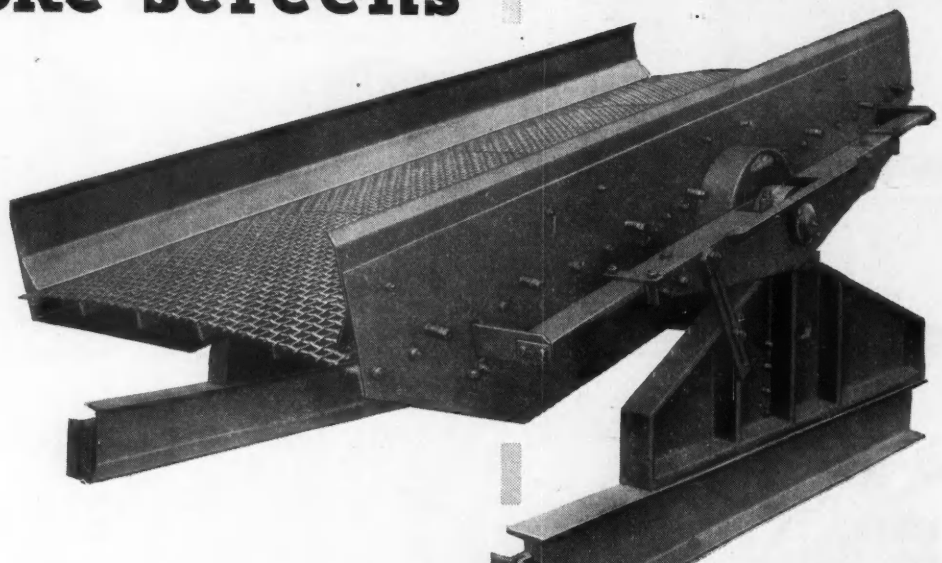

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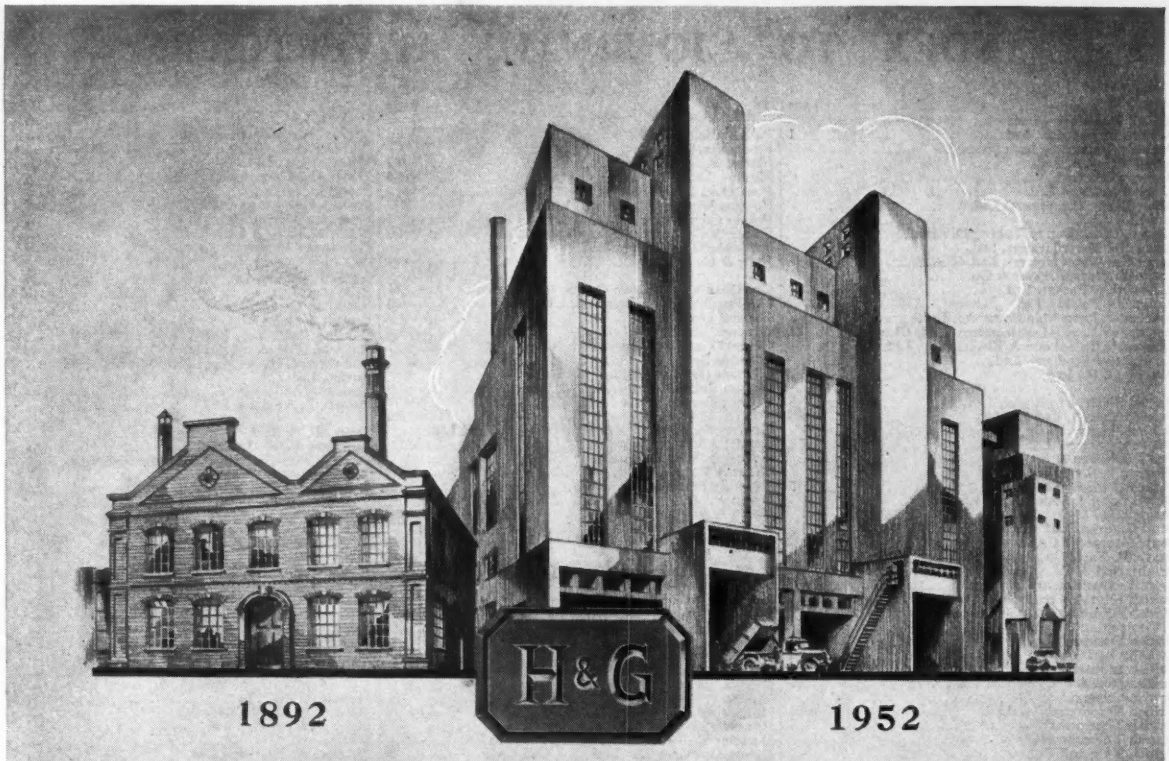

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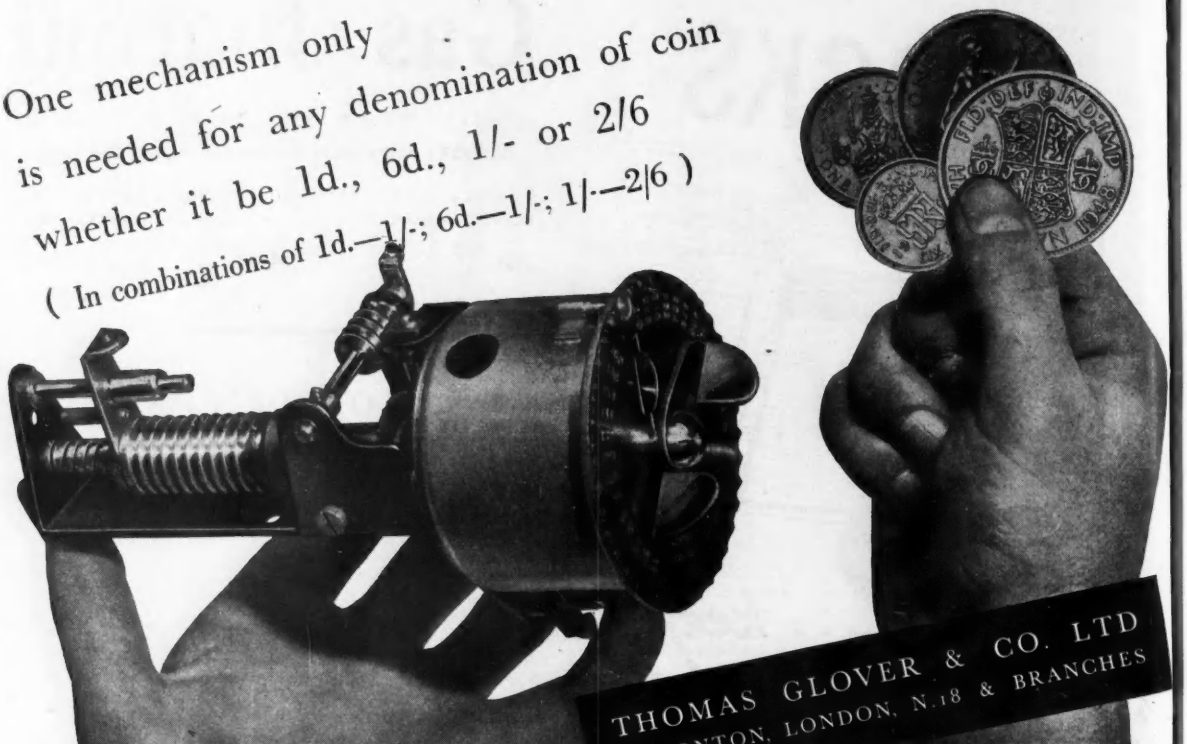

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GAS JOURNAL

VOL. 271. No. 4648 104TH YEAR JULY 2, 1952

GAS IN THE NEW TOWNS

THE New Town is a new phenomenon in the development of this old country of ours. The planning of gas supply to the new towns is a new adventure in the career of gas engineering. In no region is this problem presented in so urgent a form as that in which Mr. W. A. Evetts has been called upon to exercise his great abilities, no doubt enthusiastically supported by a fine team of colleagues and assistants. The Eastern Gas Board was confronted with a situation in which 'rather abnormal development' (a delicious understatement) was taking place at a time when capital costs are high. On this question of capital costs it would be an interesting exercise to work out just what would be the equivalent value in current money of the million pounds which Mr. Battersby says was spent by his former Company over the preceding 100 years. But there it is. The New Town provides an incomparable opportunity for the application of planned method to distribution and supply, but the high capital costs, even if everything is done to limit provision for the more distant future, inevitably means high capital charges for a number of years until development is complete.

The details of the schemes of manufacture and interconnection adopted in the Watford division of the Eastern area are of absorbing interest. They brought their designers sharply in contact with more than one problem of general interest to the gas industry. That of coke may be said to be dealt with, or shall we say touched upon, in two short sections, little more than two pages of Mr. Evetts's paper to the Institution of Gas Engineers. The question is, how to meet the growing demands for coke while carrying out the inescapable duty of meeting the equally growing demand for gas from supplies of coal the growth of which threatens to come to an end and the quality of which is certainly showing no signs of improving. On the one hand no one can now deny that the solid-fuel appliance with fuel stored at the point of consumption is the only economical weapon to deal with the winter peak of space heating demand—on the other hand, that the growing demand for gas is tending to the gasification of more coke for the generation of either water gas or producer gas. It is a considerable dilemma. We do not think it will be resolved until the fuel industries of the nation produce a united policy for the production and utilisation of heat energy in all its forms. Gas coke can never meet the whole demand if smoke is to be abolished, and the industry might very well hold its hand, 'sit on the fence,' until the other parties in the game have made up their minds what they are going to do about it—ready at all times to join in a reasonable discussion of the whole question. Coke demand should indeed have as much consideration as gas demand, but it should be on a national scale embracing the fuel question as a whole.

In the meantime the proposal to use producer gas for industrial uses, a suggestion much discussed at the meeting, is well worth careful consideration. It does not, of course, necessarily mean that coke should be the producer fuel. And in this connection the proposal to use a low grade non-gas-making coal in the producer of the retort house might well be given another airing. It looks as if the substitution of such a fuel for coke in the carbonisation of the 670,000 tons of coal mentioned by Mr. Evetts would liberate another 80,000 tons of coke for use in smokeless space-heating and industrial appliances, against his deficit of 16,000 tons.

Among other interesting features of the paper was the position of the relatively small works in the interim period. The decision to use such works to the full, at any rate, in the development period was surely a wise one. Operated on base load lines of give-and-take to and from the adjoining large plant they should be an economical proposition for years to come.

The intervention of the architect in the design of gasworks is a modern phenomenon upon which we have commented before. Our French colleagues are particularly interested in the æsthetics of industrial plant just now. We are sure that the most satisfactory results will

be obtained from a collaboration between architect and engineer. But Mr. Battersby has hit the nail on the head. Make sure to employ a skilled and experienced industrial architect, with a well-known name, to sign drawings. We can quite understand that 'it has been a great advantage to have someone who could talk to architects in their own language.' Sometimes it can be a very queer language indeed. And we too join in his congratulations to Mr. Evetts on the 'dignified restraint' shown in his reference to the seemingly endless obstruction which some of the new planning authorities delight to put in the way of industrialists who are doing their best to increase productivity and restore stability to the country's industrial life. The frustrations of Oxford and St. Albans must have been hard to bear.

JOINT CONSULTATION

UNDER Section 57 of the Gas Act the Gas Council, in common with the central authorities of all the industries nationalised since the war, was put under statutory obligation to set up machinery for the negotiation of wages and conditions of employees and for joint consultation, and we have seen from the first and second annual reports of the Gas Council and the area boards and more recently from the reports of the three national organisations representing members of gas staffs how effectively the duty has been carried out. To secure that the old local loyalties should be merged in the larger loyalties of the new régime in which 12 authorities took the place of over 1,000 undertakings was not easy in all cases but, to quote the second annual report, 'the manner in which they have been merged is not the least of the achievements of the boards and of their employees.' The National Joint Industrial Council, mainly concerned with manual workers, is not very different from that which functioned successfully for many years as between the Federation of Gas Employers and the various unions concerned; the National Joint Council for Gas Staffs and the Senior Gas Officers' Joint Council are more recent creations but they are settling down promisingly to their respective functions.

In its non-party studies of the nationalised industries the Acton Society Trust, to several of whose earlier research reports we have referred in previous issues, has made negotiating and consultation machinery the subject of a special investigation and the outcome is an analytical study of the whole subject in *The Framework of Joint Consultation*, the tenth of the series of 12 papers dealing with various aspects of nationalisation. Much that the investigators have to say about consultation in general does not apply to the gas industry for, as is pointed out, its machinery, which is designed to allow considerable flexibility in keeping with the higher degree of decentralisation enjoyed by the industry, is unlike that of the other nationalised industries in a number of respects. In form, the machinery falls roughly half way between the two main types employed in coal and electricity—*i.e.*, joint consultation is combined with negotiation at national and regional levels, but not at the local level. At the national and regional levels, as we have said, the old system of national and area joint councils for the manual grades has been taken over more or less unchanged and additional councils constituted for other groups. At the local level, joint consultative committees may be set up in accordance with an agreed model constitution. Their form depends on local demand and may, for example, provide one committee for all grades or a number of committees each for a different group of grades. The report says 'this procedure of building up the machinery of joint consultation from below is a noteworthy departure from the procedures of other nationalised industries and its further development will be a matter of interest.'

The gas industry's long history of good industrial relations is well known and often praised, but within its own sphere there are varying views as to what constitutes 'satisfactory' joint consultation, just as there are in the whole nationalised field, in which management, unions, and workers have a wide range of expectations, to some extent mutually inconsistent, which may well account for part of the disappointment felt about the working of joint consultation. The report reaches the conclusion that the difficulties which joint consultation has to overcome are beginning to be seen to be far greater than was generally imagined; indeed complaints are heard that consultation instead of improving industrial relations in some industries has achieved the opposite effect. Three factors which prevent it from developing on the lines expected are the unions' insistence on uniformity of treatment, the apprehensions of management, and the overriding tendency of management and the unions to treat consultation as a method of exerting power, rather than as a method of exchanging views. The basic need, in the view of the investigators, is for a clearer definition of what is meant by 'advisory' and a genuine acceptance by both sides of the agreed definition.

RIVER POLLUTION

PUBLIC attention has been directed increasingly in recent years to the deteriorating condition of rivers throughout the country resulting in damage to the interests of anglers and riparian owners and offence to public recreation and amenities. A number of actions have been taken to the Courts, notably a case in which Lord Brockett was granted an injunction restraining the Luton Corporation from discharging injurious effluent from its sewage works into the River Lee, and more recently in the Chancery Division where Mr. Justice Harman granted injunctions asked for by the Derby Angling Association and Lord Harrington against the Derby Corporation, British Celanese, Ltd., and the British Electricity Authority in regard to pollution of the River Derwent by effluents from a sewage works, a factory, and a power station respectively. By the passing of the Rivers (Prevention of Pollution) Act, 1951, Parliament has signified its decision to make the control of pollution more effective by entrusting this duty to the newly formed river boards which were given certain powers to adopt standards of purity to which all effluents would have to conform. In matters of this

kind, however, there must always be a wide gulf between good intention and actual performance, for no improvement in legislation or Court rulings on points of law can produce pure rivers unless the technical knowledge exists and the practical means are available to produce the desired results.

Heavy arrears of extensions and reconstructions of sewage works have accrued from the virtual cessation of construction work for the 13 years since 1939, and these must be overtaken before improvement in existing conditions of rivers can be hoped for. In the present national situation there is no early prospect of local authorities being allowed by the Government to proceed with this work, even if the necessary materials and plant were available for such a purpose. Assuming this is a passing phase there remain from the long-term point of view the technical problems which must be solved before the objectives of the 1951 Act can be attained. This aspect has been studied by the Institute of Sewage Purification, whose members are technical experts engaged on every side of the problem, including officers of authorities responsible for sewage purification on the one hand, and of river boards responsible for pollution prevention on the other, together with research workers in allied fields of waste water treatment. A memorandum on the subject—intended as the communication of the national body of opinion of technical officers working in this field to a representative gathering of members of local authorities and river boards with a view to seeking a common policy—was discussed at the annual conference of the Institute at Scarborough on June 25, attended by representatives of over 250 authorities.

The main conclusion of the memorandum is that given adequate treatment plant, the improvement of rivers to the desired standards can be readily achieved so far as the purification of domestic sewage is concerned, and that complete success will depend on the ability to give proper treatment to trade effluents from industrial sources. The pollution of rivers by industry can be prevented most effectively by the discharge of all suitable effluent into public sewers for treatment at the sewage works, but that must be done under certain safeguards. There are many sewage works which suffer badly from the effect of injurious effluents discharged into sewers from factories. These discharges cannot be brought under control because of privileges given to traders by a previous Act of 1937. So long as this position continues, many local authorities will be quite unable to comply with the requirements of the river boards under the 1951 Act.

The memorandum examines the whole field of the relationship between the trader and the local authority from the broad national point of view and sets forth the basic conceptions of policy which the Institute believes to be in the best interests of all concerned. It is recommended that national policy should be based on the achievement of justice and equity for all parties, not only between the local authority and the trader, but also between one trader and another; and that when agreement is reached on what is a fair relationship between the trader and the community in the conditions ruling today then all existing conditions of privileged discharges should be revised for the purpose of bringing them into line with those relating to new discharges.

METAMORPHOSIS

FORMAL resolutions for the voluntary winding up of the Gas Research Board and the transfer of its assets to the Gas Council were passed at an extraordinary general meeting of the Board at the Institution of Gas Engineers on June 26. Mourning was not worn and there was no funeral oration, nor was there any noticeable interruption in the progress of the research work that received official recognition when, after prolonged discussions, the Gas Research Board was born 13 years ago. The Gas Council, expressly charged under the Gas Act with settling a general programme of research, had intimated early in its life that it could not see how the Board could continue in its existing form and work parallel with any research organisation which the Gas Council might establish. The ultimate transfer of the Board's assets to the Gas Council was a natural consequence, and a little over a year ago Colonel H. C. Smith, Chairman of the Gas Council, in his capacity as an Institution nominee, accepted office as Chairman of the G.R.B. Council to assist in seeing that the transfer of the research work, and such staff as were agreeable, from the G.R.B. to the Gas Council should be effected as smoothly and expeditiously as possible. A special committee formulated recommendations, on which it took counsel's opinion, and the winding-up meeting was the outcome.

The meeting, attended by fewer than 20 members, at least one of whom spent 10 hours in trains to exercise his right to be present, occupied just four minutes, and oratory was restricted to a Smith duologue—Colonel H. C. in the chair and Sydney (Chairman of the East Midlands Gas Board). There were two resolutions, one for the voluntary winding up and the appointment of Mr. A. W. White, F.C.I.S., as liquidator, and the other approving an agreement between (1) the Gas Research Board, (2) Mr. A. W. White, (3) Mr. F. B. Holmes, Mr. H. S. Cheetham, and Mr. R. B. Potter, and (4) the Gas Council for the transfer of the assets, and authorising the liquidator to carry it into effect. Each was proposed separately by the Chairman and seconded by his East Midlands namesake. The agreement was duly sealed, and the Chairman reported that 100% of the members had signified their approval of the action. He thanked those who had attended—some at considerable inconvenience—to participate in so short a meeting, and commented that it had taken very much less time to wind up the Gas Research Board than it did to form it.

EFFECTIVE CONFERENCE

WE have just read with much interest two papers submitted at a conference at Bournemouth of unit managers and junior officials from all parts of the Western division of the Southern Gas Board. They are indicative of the enthusiasm of those who for various reasons seldom if ever find it possible to attend the meetings of the gas industry's recognised organisations. Mr. J. T. Haynes, Senior Vice-President of the Institution of Gas Engineers, is Divisional General Manager and from the start of nationalisation he has encouraged this particular activity. Owing to geographical situation, it is not always convenient for those who are members of the Institution to attend

meetings of either the London and Southern or the South Western Section, nor is it practicable for the junior officials to attend meetings of the London and Southern or the Western Junior Gas Association. In addition there are on Mr. Haynes's staff unit managers of rural gas undertakings who are not eligible for membership of those bodies.

Since nationalisation, therefore, the greatest possible encouragement has been given to an annual one-day conference of unit managers and junior officials, at which papers of technical interest are presented by the staff themselves and freely discussed. There are also visits to works and the average attendance of about 40 makes for effective intercourse. This year's conference was held at Bournemouth and of the papers submitted one was by Mr. D. J. Butler, Works Superintendent at Salisbury, who described the great advances in technical control at the Salisbury works in the past three years, and another was by Mr. G. T. Rendell, Distribution Superintendent of the Sherborne group, who entertained his colleagues to a vivid account of distribution in rural areas. We are told that the discussion was free and generously critical, the whole conference having much of the atmosphere of a junior association meeting.

Personal

Mr. Ernest Galley relinquished his appointment as Advertising Manager of Radiation Group Sales Ltd. as from June 14 to join the Board of Stephens Advertising Service, Ltd.

Mr. D. K. Green, M.INST.GAS E., M.INST.F., has been appointed to the position of Senior Engineer in Charge, Foleshill works, Coventry district of the West Midlands Gas Board. Mr. Green was formerly Engineer and Manager of the Leamington Spa district in the West Midlands.

Mr. H. G. Sams, Joint District Manager, South Eastern district, Metropolitan Division, and Mr. F. H. Brett, loco clerk at East Greenwich, have recently completed 50 years' service with the South Metropolitan Gas Company, and latterly the South Eastern Gas Board.

Mr. F. W. Wort has been appointed Manager of Radiation Group Sales Ltd., for the Wales area and will cease to represent the Company in the North Western area. **Mr. E. J. Richings,** Sales Representative for the North Western area, has retired from the service of the Company and has been succeeded by **Mr. H. W. P. Shewring.**

Mr. R. G. Luxon, Engineer, Manager, and Secretary of the Guernsey Gas Light Company, was elected a Director at the annual meeting of the Company on June 24 in appreciation of his services during the past 26 years and in order that his technical knowledge may still be available to the Company after his retirement next year.

Mr. Stanley Irving, who joined the Gas Council last year as Assistant Films Officer, has now been appointed Films Officer. Mr. Irving was previously films officer of the Ministry of Works and before then he worked in the production departments of British and Dominion, Sir Alexander Korda, and the J. Arthur Rank Corporation. During the war he was supervising editor of the Royal Naval Film Section.

Obituary

Mr. Joseph Hadden, a Director of William Edgar and Son, Ltd., died last Wednesday at his home, 25, Parklands Road, S.W.16. He was in his 72nd year. Though for some time he had been in indifferent health, his death will come as a shock to a wide circle of friends, a great many of whom are connected with the Evening Star Lodge and Chapter. The sympathy of all is extended to his widow.

Diary

July 5-19.—British Food Fair, Olympia. Gas Council exhibit.

July 9.—National Benzole Association: Annual General Meeting, Wellington House, Buckingham Gate, S.W.1, 3.30 p.m.

July 9.—London and Counties Coke Sales Circle: Summer Meeting, Radiation Ltd., Birmingham, leaving Paddington 9.10 a.m.

July 11.—Midland Section, I.G.E.: Summer Meeting, Leamington Spa, 11 a.m. Visits to gasworks, S. Flavel & Co., Ltd., and Warwick Castle. Ladies invited.

July 16.—South Western Section, I.G.E.: Summer Meeting and Ladies' Day, Barnstaple.

July 21.—Eastern G.C.C.: Connaught Rooms, Kingsway, W.C.2, 2 p.m.

1952 'Journal' Directory

THE following changes have been notified during the past month. To keep the information in the 1952 edition of the *Gas Journal Calendar and Directory* up to date readers are invited to note these alterations (together with the appropriate adjustments relating thereto in the 'Personal' section of the *Directory*, pp. 141-156):

Page 22.—EASTERN GAS CONSULTATIVE COUNCIL: Change of address: Top Floor, Ardor House, 2, The Broadway, Bedford. (T/N Bedford 2180). Add Councillor E. Barrett (Bishops Stortford), *Member.*

„ 22.—NORTH THAMES GAS CONSULTATIVE COUNCIL: Delete Councillor B. M. Dodds and the Dowager Lady Nunburnholme, resigned.

„ 23.—SOUTH EASTERN GAS CONSULTATIVE COUNCIL: Add P. W. Mayes, J.P. (Erith), *Member.*

„ 55.—NORTH THAMES: J. A. Hepworth, *Deputy Ch E,* vice S. T. P. Perry, retired.

„ 56.—NORTH THAMES, GROUP II: Delete J. A. Hepworth, *Assistant Ch E,* and substitute H. W. Moys, *Group E.* R. G. Plummer, *Station E,* Bromley, vice H. W. Moys.

„ 56.—NORTH THAMES, SLOUGH: W. W. Chisholm, *Works M* becomes *Station E.*

„ 57.—NORTH THAMES, HEADQUARTERS DIVISION: N. R. Junkison, *Div. M.*

„ 66.—KIRKHAM: Delete F. Ashton, *Dist M,* deceased.

„ 67.—ATHERTON, LEIGH, and TYLDESLEY: Delete W. S. Martlew, *Dist Service M,* deceased.

„ 170.—SYDNEY, N.S.W. (AUSTRALIAN GAS LIGHT COMPANY): W. W. Pettingell, *Gen. M,* vice H. Tindale, retired. J. B. Robinson, *Assistant Gen M.* (Former positions of Assistant Gen M (Commercial) and Assistant Gen M (Technical) are abolished).

„ 179.—INSTITUTION OF GAS ENGINEERS: President, G. E. Currier, O.B.E., M.I.MECH.E. Vice-Presidents: J. T. Haynes, M.I.C.E.; W. K. Tate, M.A.

„ 182.—EASTERN SECTION: *Chairman,* F. A. Rhead (Peterborough); *Senior Vice-Chairman,* Bernard Clarke, M.B.E., J.P. (Lincoln); *Junior Vice-Chairman,* W. A. Evetts, M.C. (Watford).

„ 182.—LONDON AND SOUTHERN SECTION: *Chairman,* C. R. M. Croft (Brighton, South Eastern). *Senior Vice-Chairman,* Dr. J. Burns (North Thames). *Junior Vice-Chairman,* E. O. Rose (Tottenham, Eastern). *Hon. Secretary and Treasurer,* A. F. Grant (Bow Common, North Thames).

„ 182.—MANCHESTER AND DISTRICT SECTION: *Chairman,* Alex McDonald (Member, North Eastern Gas Board). *Senior Vice-Chairman,* A. K. Collinge (Preston). *Junior Vice-Chairman,* H. Johnston (North Eastern).

„ 182.—MIDLAND SECTION: *Chairman,* J. E. Wakeford (Birmingham). *Senior Vice-Chairman,* W. MacNaughton (Wolverhampton). *Junior Vice-Chairman,* C. C. Wood (Sheffield and Rotherham).

A Review of the

Brussels Conference

June 16 to 19

Last week we made brief reference in the Editorial Notes to the successful 5th Conference of the International Gas Union. For those whose time and currency permitted the four days in and around Brussels were followed by two days of extended touring. The total attendance was about 480 delegates and 193 lady visitors; the countries represented being Austria, Belgium, Denmark, France, Germany, Great Britain, Holland, Italy, Japan, Luxemburg, Norway, Spain, Sweden, Switzerland, Turkey and U.S.A. This conference marked the close of the three years' Presidency of Monsieur Marcel Brabant and the election of Mr. R. W. Hendee, of Colorado Springs, as President for 1952-55. The following is our review of the proceedings, and also in this issue we publish abstracts of papers contributed by Great Britain.

Monsieur Brabant, President, 1949-52, opens the Conference.

Opening Ceremony

The official opening of the conference took place at 11 a.m. in the Palais des Académies. There was a large attendance, and among distinguished visitors were the Papal Nuncio (Mgr. Cento) and a representative of the Belgian Foreign Minister, apart from M Duviensart, the Minister for Economic Affairs, who officiated. First, however, there was a welcome to all the delegates from General A. Pirot, President of the Royal Belgian Gas Association, and a reference to the continuous development of the gas industries of all countries.

M. Duviensart, in a brief opening speech, referred to the Belgian van Helmont who, through his research, might be considered one of the pioneers of town gas. The Minister went on to say that gas production in 1951 in Belgium had shown an increase of more than 25% over the previous year, and to stress the difficulties of the coal supply position. It was essential, too, that the fuel oil situation should be considered internationally.

M. Brabant then delivered his address, of which the following is an abstract.

Having briefly traced the progress of man's energy resources from solar radiation to coal, which remains one of the most important owing to its wide distribution throughout the world, M. Brabant pointed out that though the discovery of coal goes back to about the 13th century, its history and its origins are still somewhat mysterious. Less mysterious is the history of the gas industry; it dates back no farther than a century and a half, to an age when men of science, working often independently of one another, discovered almost simultaneously the principle of the distillation of coal, determined the applications of the new gas thus produced, and foretold its future.

The British Group at the Contimeter Works.

Passing quickly over the story of gas manufacture in the 19th century, M. Brabant came to 1910 when technicians of the coking and gas industries began to collaborate in the substitution in certain cases of coke oven gas for retort gas. In the last decades in several European countries the coke oven came to be considered as the last stage in the technique of gas production for public distribution. But more recently, in the years in which Europe has suffered from shortage of coal, hitherto regarded as the exclusive raw material for gas production, efforts have been made on the one hand to obtain the maximum thermal production per ton of coal in carbonising processes, while on the other hand processes are being developed for the gasification of inferior solid fuels such as coke, lignites, and peat.

Water gas and carburetted water gas processes are finding favour, with the growing possibilities of using the residual products of the petroleum refinery and heavy oils. Complete gasification in producers under pressure with oxygen-enriched air is being studied. But all these processes using coke or low-grade coal are in competition with methods of gas production from liquid or gaseous fuels of subterraneous origin. Coal gas is being supplemented by gas produced by the cracking of gas oil or fuel oil or by natural gas. These processes have generally originated in the U.S.A. where in addition to vast reserves of coal there are large

deposits of petroleum and natural gas the production and transport of which are relatively cheap. Similar deposits are today found in several European countries—in France, Germany, Austria, Holland, and in Belgium with methane from the coal mines. The development of these new resources enables countries relatively poor in coal supplies but rich in oil and gas to continue the distribution of gaseous fuel. They involve complicated problems and new processes.

The processes of Bergius and Fischer-Tropsch for the production of liquid fuel may be justified in the future when one thinks of our available solid fuel, while supplies of liquid fuel, the production of which we may assume to reach a maximum towards 1985, may come to an end towards the end of the century. One might therefore expect the return to greater utilisation of coal about 1980.

In the meantime it is clear that we must contemplate in our distribution systems gases with compositions and combustion characteristics differing widely from those of the 'good old lighting gas of former days.' Gas appliances must be adaptable to the 'gaseous cocktail' which will be supplied to them.

M. Brabant touched lightly upon the many ancillary problems—the transport of gas over considerable distances, purification with the fixing of rational standards for the control of sulphur compounds, effluents in relation to national water supply, the utilisation of coke (particularly small coke), and approved standards for appliances generally.

In the struggle among the different forms of energy in the market, gas will take an honourable part if it can be supplied at a reasonable price; but the competition must be honest, rational. Abnormally low prices are to be excluded because they compromise the maintenance of existing plant and preclude the possibilities of indispensable modernisation. Preferential tariffs below cost price are unjustifiable because in practice they militate against the fair play which should rule between the different forms of energy. If on the other hand the consumer should have freedom of choice, it should be forbidden to use raw fuel susceptible to upgrading or to use apparatus of low efficiency. A fuel policy not only national but international is necessary if we are to avoid stoppages and shortages of fuel the supplies of which are not inexhaustible.

Mr. R. W. Hendee (Colorado Springs) elected President, I.G.U., 1952-55.

These pre-occupations arise out of the objects assigned to the International Union, which are restricted to the purely technical domain. It is regretted that there are no international conferences of an economic-scientific character, in which engineers would play their part and which would have for their object the study of the essential problems of the safeguard of the real riches of the world.

'What, another international congress, you will say?' There are superficial minds who regard these assemblies as talking shops in which writers and speakers join in the production of innumerable documents which encumber their office tables after their contents have over-loaded their brains. But he, M. Brabant, would underline the evident—the value of the moral, if incalculable, results of the interplay of minds. 'Every congress like this of ours, devoted to the pursuit in common of problems in the advancement of material progress, throws to the wind grains of peace, fragile perhaps but precious.'

The New President

The announcement of Mr. Hendee's election as President was then made, and in acknowledgment he regretted his present inability to speak in French, but promised a stern effort to master that language before 1955. To be President was not only an honour but a responsibility and he would do his utmost to advance the interests of the Union. He congratulated M. Brabant on his term of office, and on the very able address he had given them. He, Mr. Hendee, would feel happy if as President he could do as well as M. Brabant and Colonel Croft had done.

Monday's Visits

The alternative visits for the first afternoon were all in or on the outskirts of the city:—

(a) The Marly coke ovens and ammonia synthesis plants.

(b) The Nestor Martin Foundry—light castings, press and sheet work, polishing and plating, enamelling, etc.

(c) The Contimeter Meter Works. This company specialises in the manufacture of dry gas meters, water and electricity meters, and instantaneous gas (sink and multipoint) water

Left to Right: T. V. Garrud (London); A. G. Higgins (Assistant Secretary, I.G.E.); S. F. Baker (Surbiton); R. H. Touwaide (General Secretary, I.G.U.); Dr. W. T. K. Braunholtz (Secretary, I.G.E.).

The Fifth Installation of W-D Continuous Vertical Retorts now under construction at the Kensal Green Works of the North Thames Gas Board—48 - 82" Lambent Heated Retorts incorporating special major and minor axis tapers and with a coal carbonising capacity of 336 tons per day. Immediately behind is the Fourth Installation—96 - 44" Lambent Heated Retorts with a coal carbonising capacity of 371 tons per day.

In the background are the three earlier installations each of Downward Heated Retorts with coal carbonising capacities of 100, 120 and 200 tons of coal per day.

The total carbonising capacity of all these plants will be 1,127 tons of coal per day.

THE WOODALL-DUCKHAM VERTICAL RETORT & OVEN CONSTRUCTION CO. (1920) LTD.

Woodall-Duckham House, 63-77 Brompton Road, London, S.W.3 Tel: KENsington 6355 (10 lines) Grams: Retortical (Southkens) London

TURNERS ASBESTOS CEMENT CO LTD
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TRAFFORD PARK MANCHESTER 17

that these natural resources were not heaters. This visit was selected by the *Gas Journal*, and our representative was greatly impressed by the precision machinery, the evidence on all sides of the practical application of time and motion study, the cleanliness and air conditioning of the shops, and by the obviously solid work of the operatives. Further, they work a 48-hour week.

(d) The Brussels Foundry—for domestic space heating appliances—in which continuous belt casting and mechanical moulding are installed.

Civic Reception

In the evening the delegates were received by 'Le Collège des Bourgmestre et Echevins et le Conseil Communal de la Ville de Bruxelles,' and a very brilliant affair it was, with dancing and a champagne buffet from 9 p.m. till midnight, and magnificent salons hung with historic masterpieces to wander through.

Tuesday's Business

At the Palais des Beaux-Arts, M. J. Kec, President of the French Association, presided in one theatre, Mr. F. M. Birks in another; and in each six papers were presented in a session lasting 2½ hours. As mentioned in our columns last week, we were left wondering whether fewer authors and greater generalisation would not have produced more lively discussions. At this first session there were no speakers at all on our own papers by J. E. Davis and R. H. Busbridge.

Further Visits

In the afternoon, the following alternative visits had been arranged:—

(a) The Eternit Company's asbestos-cement works at Cappelle-au-Bois.

(b) The E.G.E.A. (water, gas, and electrical appliance) Company, of Brussels.

(c) The Brussels coke oven plant on the Canal Maritime. This is under M. Brabant's own direction, and a large party attended the visit. Among much of interest that was to be seen was a spiral guided holder of nearly 5 mill. capacity under construction to the design of Henry Balfour, of Leven. Of the latter firm, Mr. A. C. Bureau was in attendance for the visit. The

A. F. Oatley (Bilston) with J. T. Haynes (Vice-President of the Institution).

ovens here are of the Lecocq system, and the visitors were delighted to meet, over refreshments and champagne provided by the Société Lecocq, the venerable President of that firm, Monsieur François ('I am always delighted to meet Englishmen because I served my time as a workman in Leeds').

Banquet

This was served to nearly 400 in the assembly room of the Concert Noble; the evening providing a memorable gastronomic treat of some length followed first by speeches of unexpected but highly gratifying brevity and then by dancing.

Mr. Hendee proposed the toast of 'The Guests," mentioning specially the President of the American Gas Association and Mrs. Bennett, Colonel and Mrs. Harold Smith, and Mr. H. C. Wolf (Manager of the A.G.A.).

Mr. G. E. Currier, as President of the Institution of Gas Engineers, a founder member of the Union, replied. He counted himself particularly fortunate that a conference of the Union should be held during his presidency. He continued:—

Since the nationalisation of the British gas industry the Institution had established a close liaison with the Gas Council—the policy controlling body of the nationalised industry. He was, therefore, pleased to find himself the leader of a British delegation which included the Chairman and the Deputy Chairman of the Gas Council—Colonel Harold C. Smith and Mr. H. F. H. Jones. It was an additional pleasure to have with the British delegation a distinguished Past-President of the Union, Colonel C. M. Croft, and two Vice-Presidents, Mr. F. M. Birks and Mr. C. H. Chester.

There was throughout the world today a growing appreciation of the fact that the known reserves of the basic fuels, coal and oil, were being used up too rapidly. With the ever-growing demand for heat and power, and no immediate prospect of alternative sources of supply, they owed it to posterity to ensure

Left to Right: E. G. Smith (Glasgow); D. D. Melvin (Edinburgh); D. P. Welman (Manchester); W. Hodkinson (Manchester); J. Corrigan (Northampton); D. W. Kay (Salford); T. Nicklin (Manchester).

Mr. Sydney Smith (left) with Mr. and Mrs. K. L. Pearce (Derby).

wasted. There was an increasing awareness of the need to avoid inefficient, extravagant usage not only of the basic fuels, but also of the manufactured fuels derived from them. Some progress in fuel economy had been made by consumers—individually or in groups. The gas industry, as a producer and a consumer of fuel had contributed substantially by improvements in its processes for the production and utilisation of gas and coke.

In the opinion of many, however, the maximum benefits could only be secured by concerted action on a nation-wide scale. It was inevitable that Government sponsored fuel policies would be developed, which, while meeting the reasonable requirements of all consumers, would ensure the most efficient and economical application of every type of fuel. Given wise and impartial leadership, there was no reason why such policies should not be devised and implemented. The gas industry in Britain, as in most other countries represented there, had continued to develop and expand year by year. In 30 years since 1920, sales had doubled in volume; since 1938 they had increased by 60%. It was now generally recognised that the gas industry had a vital part to play in the life of every industrially developed nation. They believed that in any fuel economy there was ample scope for the utilisation of solid smokeless fuels, of gas, and of electricity, but each had its appropriate sphere of application, its own service to render to the community. Overlapping of one fuel into the true sphere of another involved waste of the basic fuels and of capital and labour. True economy demanded that each manufactured fuel should be restricted to that field of use for which it was most suitable, and by which basic fuels were best conserved.

After a reference to the valuable paper recently presented to the Institution by Monsieur J. Kec, Mr. Currier went on to say that discussions on papers and on other matters, both in conferences and in private conversation, probably provided the greatest source of ideas for the industry's progress, and a justification, if one were needed, for gatherings of this kind. As the Chinese said: 'A single conversation across the table with a wise man is better than ten years' study of books.' One liked to think, too, that the value of the international conference was not only in the interchange of technical information. They lived in troubled times. Most of the countries represented had experienced the sorrow and tragedy associated with war, and at times the outbreak of a third world war appeared to be dangerously near. Not one of them in the room but would do his or her utmost to prevent such a tragedy, and one had only to witness the obvious pleasure of delegates when they met friends from other countries to realise the peace-preserving possibilities of these international gatherings of men with like interests.

The Croft family after hours. (Colonel C. M. Croft is a Président d'Honneur of the I.G.U.).

'Mr. President,' he concluded, 'by your efforts to bring us together at this meeting you have enabled us to renew old friendships and make new ones. I am sure that your labours will have contributed materially to the cause of lasting peace.'

Wednesday's Business

This consisted of 11 papers presented in the contemporary sessions in the morning and in the afternoon reports, not for discussion, by the American, French, British, Dutch, and Belgian Associations; the subject of the British being education and training in the industry, reported by Mr. J. H. Dyde, Immediate Past-President.

At the close of the sessions, M. Basil called for a hearty vote of thanks to all and of good wishes to Mr. Hendee, who replied that it would be very hard to follow M. Brabant. He paid a warm tribute to M. Touwaide and the precision of working for which he had been responsible. During his (Mr. Hendee's) term as President he would ro his utmost to promote friendship between the countries represented.

This full day closed with a tea reception at the Musée d'Art Ancien and reserved seats in the studio of the National Broadcasting Institute for a philharmonic concert.

Further Afield

Thursday, the last day of the official meeting, was devoted to alternative visits to Liège (coke ovens and tube works), Hainaut (coke ovens and ceramic works) or Antwerp and its harbour.

E. Olding Rose (Tottenham); Chas. Cooper (Huddersfield).

A Corner of the Comprehensive Display of Gas Literature.

Thereafter, serious research was abandoned and those delegates who were fortunate enough to remain could "do" Ghent and Bruges and some of the plages on Friday, and wind-up a memorable meeting by week-end excursions to Holland or the Grand Duchy of Luxemburg. We in this country are well used to the expression 'Institution weather.' That same blessing seems to rest on meetings of the International Gas Union.

During the first two afternoons of the conference a special showing of gas films was provided for delegates and a number of the public, and after the official close of business on Wednesday many of the delegates remained to see the Gas Council films 'The Vital Flame' and 'Robinson's Dream House.' The latter, in Technicolor, is still in the experimental stage but is envisaged as a cartoon eminently suitable for international use by virtue of the fact that the dialogue is presented by a parrot character, thus eliminating bilingual difficulties. It should prove popular and certain big publicity men in the industry already carry 'Mr. Cocky' about with them (*vide* our photograph on the right).

Publicity Display

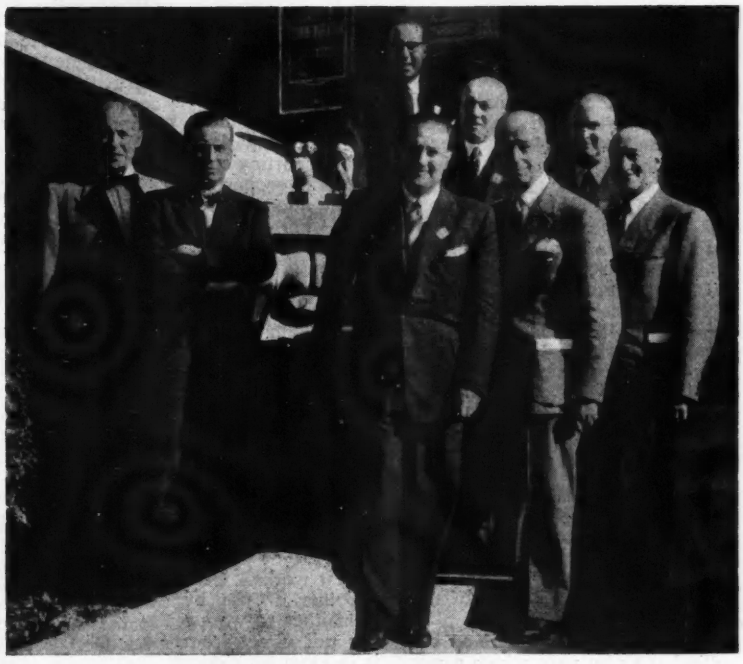
During his term of office as President it occurred to M. Brabant that something other than pure engineering, chemistry, or physics might well be introduced into the atmosphere of the triennial congress. His idea found expression in the collation of publicity material from 10 countries and its display in a hall adjacent to the conference rooms. In the matter of display a leading part was taken by the Publicity Manager of the Gas Council (Mr. R. J. Gregg) assisted by Mr. C. Warrenne and Mr. W. D. Elson. Our photograph of one vista of stands is reproduced above.

Group Classification

The various items of literature, display cards, and so on, totalled well over 500 and were classified and indexed in seven groups as follows:

1. Consumer publicity.
2. Education and training of personnel.
3. Public relations.
4. To architects, builders, engineers, etc.
5. Press relations.
6. Schools and youth.
7. Trade and various professions.

Much more of the commercial viewpoints and problems of the industry, internationally speaking, is likely to be heard in future, for a Publicity Committee of the I.G.U. has been constituted. Members are introduced by the photograph below.



The International Publicity introduce Mr. Cocky. Left to Right: F. Fischer, Zürich; C. W. Pilo, Stockholm; R. J. Gregg, London; Ivan Kern, Geneva; G. Cortina, Rome; Fr. Steinkuhler, Brussels; Dr. W. Wolff, Frankfurt-on-Main; W. Bauser, Stuttgart.

Sea-borne Coal: No.1.

Seventeen Bridges to Wandsworth

The first of a series of articles on the importance of sea-borne coal to the economics of the gas industry, written and illustrated by G. W. Battison, Editor of *Gas Service*.

LET me make it clear, at the outset, what this article on the gas industry's sea-borne coal supplies is *not*. It is neither a technical and statistical appraisal of the economic and operational details involved, nor on the other hand is it a fulsome and sentimental account of the 'romance' of the subject. It is something between the two and is offered for the interest of those of our readers—and there must be many—who know little of the important part played by this form of transport in the British gas industry. Although figures are quoted and an attempt made to explain in clear terms the factors involved, the account is not entirely untinged by the author's fascination, shared by most landlubbers, for almost anything afloat, from the humble punt to the 'Queen Mary.'

First then, why is coal transported by sea? What is its advantage over other forms of transport? The answer is threefold. Cheapness, quickness, and reliability. Transport by sea has always been cheaper, but with the large and frequent increases in railway freight charges over recent years—a trend that appears likely to continue—the advantages of this method are becoming more marked. Of the contributory factors in the cost of transporting coal, one of the most serious is handling. A large proportion of the approximately three-and-a-half million tons of coal per annum consumed by the South Eastern Gas Board is drawn from coalfields in Durham (comparatively small quantities come from Northumberland, Yorkshire, and Kent) and much of this can be transported from port to gasworks with no intermediate handling whatever. Consider the loads involved. The average train consists of 50 wagons each holding 10 tons—a total of 500 tons. A collier can carry 4,000 tons—eight train loads. The 4,000 tons load can be unloaded in 10 hours, many times faster than is possible with other forms of transport.

Intricate System of Distribution

The geographical location and varying sizes of the numerous works provide an intricate system of distribution, particularly as the annual tonnage for carbonisation rises from one thousand tons in the smallest unit to over a million and a quarter tons at the largest works. Coal from the sources of supply reaches points of use by devious means: In ships from loading staithes to works; by sea and thence by rail or barge; by rail direct from collieries; or by road where a works is in close proximity to a colliery. Over 90% of the total tonnage is, in the initial stage of transit, conveyed by sea, unquestionably the most economical form of transport over long distances.

The South Eastern Board favours the most intimate possible contact with this transport service, and for this reason the fleet of sea-going colliers employed on this work is both owned and managed by the Board—a position unique in the British gas industry. This policy is a continuation of that followed in pre-nationalisation days by the Wandsworth and South Metropolitan Companies.

Unloading Facilities

The vessels trade regularly to the River Thames and give service to the Metropolitan and West Surrey divisions through the organisation of the Coal and Shipping Department. The two divisions require between them over two million tons per annum, and it is expected that this will increase. The Board's coal-handling plant at East Greenwich, Rotherhithe, and Wandsworth discharges these ships expeditiously, but although all the ships can be cleared of cargo at East Greenwich, at Rotherhithe the size is limited by the length of berth, and ten of the 15 ships are designed specially to enable them to travel to Wandsworth through the Thames bridges when required. Single control enables advantage to be taken of interchange of tonnage between the three jetties to avoid unnecessary detention of the ships with consequent uneconomical running.

Distribution of coal in the divisions already named is arranged by the Department, and from East Greenwich and Rotherhithe deliveries are made by barges to the works at Old Kent Road and Vauxhall by the Board's Lighterage Section. From Wandsworth supplies to eight manufacturing stations are effected by road transport.

As already mentioned, ten of the Board's colliers are of a special design to permit navigation of the upper reaches of the Thames where movement is restricted by draught and a succession of low span bridges, complex in design. There are 17 bridges to Wandsworth and each has its own particular feature, whether it be peculiarity of design, restriction of headroom, draught of water, tidal condition or position with reference to river level. It is necessary for vessels of the largest class, when going westwards in loaded condition, to take advantage of the later effect of a flood tide to ensure sufficient draught of water and, after the cargo has been discharged, the passage down river must be commenced early in the tidal rise because, in ballast condition, the vessel is higher in the water and the last bridges must be cleared before the flood is at its height.

These ten vessels are of the 'flat iron' type in which a restricted maximum height of superstructure with telescopic masts is adhered to. Their appearance with this curious 'flush' effect is singular but not without grace. The year 1946 was exceptional in that four colliers were commissioned, three of them 'flat irons.' Of the latter

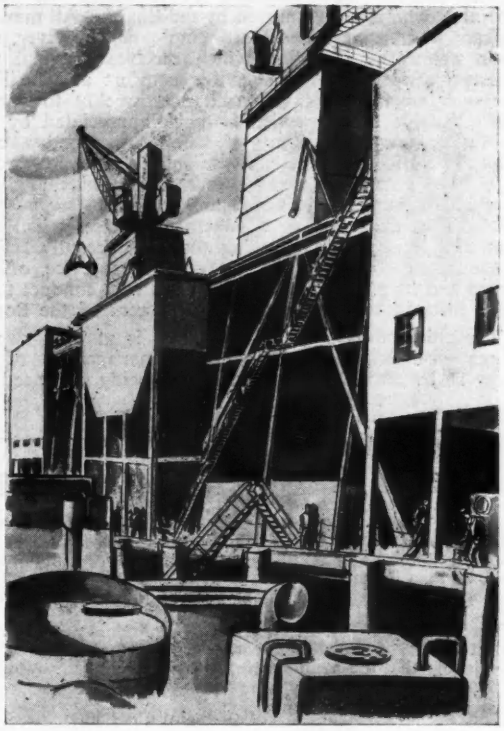
two were steam driven like their predecessors, but one, the 'Mitcham,' was powered by diesel engines. The advantages of this type are considerable. Not only is the space for cargo considerably increased, but improved facilities are possible for the comfort of the crew. The four ships commissioned since that date have all been motor driven vessels.

It is interesting to note how the capacity of the colliers has increased with the years. Wandsworth's first vessel, the 'Ratcliff,' operated in 1906; its cargo-carrying capacity was 1,050 tons. By 1926 capacity (of the 'Ewell') had risen to 1,880 tons. Another 11 years saw the 'Wimbledon' carrying 2,380 tons. Nine years later the 'Effra' was carrying 3,740 tons, and in 1948 the largest ship to date, the 'Catford,' was conveying no less than 4,040 tons. Since then the three newcomers to the fleet—the 'Wandsworth,' 'Sydenham,' and 'Croydon' have been of the up-river type, carrying 2,800 tons for interchange between East Greenwich and Wandsworth.

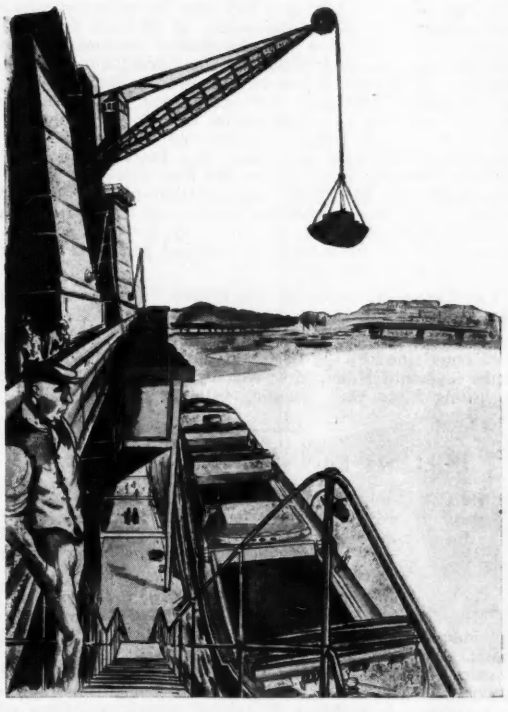
A word about the 'Wandsworth,' commissioned in 1950. This was the first British cargo vessel of over 1,000 tons cargo to be fitted with a controllable pitch propeller, an innovation which enables the captain to regulate the speed of the ship and movement ahead or astern by alteration of the pitch of the propeller direct from the bridge without reference to the staff in the engine room.

Modern Refinements on the 'Croydon'

The latest up-river collier, the 'Croydon,' which completed its maiden voyage in December last, serves as an example of modern design in this type of craft. It is of raised quarter deck type with bridge and top gallant forecastle. The holds are served by self trimming hatchways and sloping wing. Ballast tanks ensure that the cargo falls automatically within the range and capacity of grabs for discharging. Water ballast is contained in the double bottom fore and after decks and in a deep tank amidships. All the deck machinery is electrically driven and includes a windlass fitted forward, a hauling winch amidships for hatch covers and twin capstans at the after end of the ship for warping purposes. The electro hydraulic steering gear fitted over the rudder head is controlled from the bridge by telemotor gear. The vessel is powered by an eight-cylinder marine diesel engine of 1,150 b.h.p., which gives a speed of approximately 12 knots. Included in the engine room auxiliaries are three 39 K.W. generating sets. Dimensions are as follows: Length, 275 ft.; breadth, 39 ft. 6 in.; depth (moulded), 18 ft. 6 in.; draught (loaded), 17 ft. 1 in.; cargo capacity, 2,800 tons; water ballast capacity, 1,000 tons.



Collier's eye view of the Wandsworth jetty. In the left foreground is the funnel which can be so lowered that only a few feet are visible above the superstructure.



An impression of the view from the top of the jetty at Wandsworth. The collier being discharged has its wheelhouse covered as a protection against coaldust.

The wheelhouse of the 'Croydon,' like that of its sister ship the 'Sydenham,' extends to the front of the bridge. This improvement provides additional room for the officers on watch and enables them to reach their living quarters without passing through the navigating section of the wheelhouse. Single berth cabins are arranged throughout. The Master, navigating officers, engineers and wireless operator are housed amidships and the crew aft. A Calor gas cooker is installed amidships, solid fuel being used for cooking in the after-galley. Refrigeration and lighting are by electricity.

Like the rest of the fleet, the 'Croydon' is equipped with modern aids to navigation and constant communication is maintained between the vessels at sea and the Department by means of the radio telephone, a system proving of considerable value both to the captain and those ashore, as the movements of the ships can be regulated to best advantage according to berthing requirements. All post-war ships are fitted with radar; all ships are equipped with the Decca navigator.

The average crew numbers 17 including the radio operator, who is not employed by the Board. All masters, officers and ratings are Board employees, however, and their welfare is a feature which receives personal and constant attention. Amenities for comfort and facilities for such conveniences as remittances weekly to dependants provide service which is much appreciated by the sea-faring personnel, many of whom have had a considerable period of service in the ships. A large percentage have accepted special forms of contracts applying to the Merchant Navy, which are renewable every other year. The real proof of a contented service is its duration and it is worth recording that one recently retired captain has completed 25 years in the service of the Board and its predecessors. The pilots who conduct these ships through the bridges are also officers of the Board.

The chief office of the Department is at Wandsworth where business relating to complete management of the ships is transacted, the organisation being equipped to provide, among other things, a service under the headings of accounts, statistical records, income tax, insurance marine claims, etc. The Department has an office in Newcastle-on-Tyne where in addition to the work of ships agency, arrangements are made for the loading of vessels, owned by the Board or chartered through the office, to an aggregate of over 50% of the tonnage coming into the area, while the marine superintendent attends to the business of repair and maintenance of the ships, the policy in respect of which is of high standard, as well as superintendence of the building of new ships.

For the remaining tonnage, a small number of firms render service in the matter of deliveries of coal, maintaining close liaison with the Coal and Shipping Department which, although numerically small, performs an important and valuable function to every works within the area so far as the provision of coal on the most economical basis is concerned.

EASTERN JUNIORS ANNUAL MEETING

THE annual general meeting of the Eastern Junior Gas Association was held on May 24, at Stamford Hotel, Stamford, by kind invitation of Mr. Bernard Clarke, M.B.E., General Manager, Lincolnshire Division, East Midlands Gas Board.

The PRESIDENT, Mr. E. H. Winch (Cambridge) presented his report on the Association's work during the session 1951-52, mentioning that the membership of the Association now stood at 126 and covered a very wide area.

The SECRETARY (Mr. R. W. Hilham) then announced the following elections of Officers and Council for the session 1952-53:—

President: J. Anderton, Great Yarmouth.
Senior Vice-President: F. J. Denny, Ipswich.
Junior Vice-President: R. F. Robinson, Watford and St. Albans.
Council: R. C. Arnold, Spalding; F. G. Fox, Norwich; W. W. Patterson, Chelmsford; G. A. Woodwark, Watford and St. Albans.
Hon. Secretary and Treasurer: R. W. Hilham, Colchester.
Asst. Hon. Secretary and Transactions Secretary: A. D. Duxbury, Peterborough.
Education Committee Representatives: E. S. Dennis, Colchester; K. W. Hudson, Lincoln; S. C. Porter, Ipswich; E. H. Winch, Cambridge.
Hon. Auditors: T. W. Benstead, Clacton; H. R. Stanley, Cambridge.

The PRESIDENT referred to the suggested alteration of rules which had been drawn up by the Council. A formal proposal for the adoption of the new rules was made by Mr. DAVIES (Grimsby) seconded by Mr. R. C. ARNOLD (Spalding), and carried unanimously.

Mr. J. ANDERTON, the President elect, proposing a vote of thanks to the retiring President, said that Mr. Winch had been a most excellent and painstaking President. The Association had prospered during his year of office, and he (the speaker) could only hope that he would be able, in his own turn, to continue the good work which Mr. Winch had done.

The PRESIDENT replied briefly.

The SECRETARY proposed a vote of thanks to the East Midlands Gas Board and the Eastern Gas Board for the support and help which they had given throughout the year. He said that it was a great pleasure to be able to thank the Chairman of the East Midlands Gas Board in person on this occasion, and that he was most pleased that Mr. Sydney Smith had been able to be present.

Opportunity Waiting to be Grasped

Mr. SYDNEY SMITH then addressed the meeting. In the course of his remarks, Mr. Smith said there appeared to be the tendency these days to look upon responsibility as something to be avoided. Responsibility was opportunity by another name, and opportunity was there and waiting to be grasped. Opportunities in the future would be far greater than they had ever been in the past, but they would come to those who were prepared to work, to take full advantage of the facilities offered for technical and scientific training, and prepared by their own efforts to fit themselves to carry the increased responsibilities which senior positions entailed.

Dearth of Trained Technicians

Continuing, Mr. Smith commented that the dearth of trained technicians was a serious problem not only within the gas industry but throughout industry in general. To meet this need, and in accordance with one of the requirements of the Gas Act, 1948, area boards had now in operation education and training schemes for apprentices of all types, and pupilage schemes for production and distribution engineers, chemists, draughtsmen, and other technicians and professional personnel. This was, of course, a long-term answer to the problem; and so far as the technicians were concerned, the schemes were designed to attract recruits from secondary, technical, and grammar schools, public schools, and universities; and the facilities offered were generous. The short-term answer was far more difficult; but as far as the East Midlands Board was concerned they had under consideration the introduction of refresher courses in operational control for technical assistants, chemists, shift engineers, and so on, and, where possible and appropriate, the recruitment of technical personnel from other industries to fill the gaps.

The PRESIDENT proposed the thanks of the Association to Mr. Sydney Smith for his address.

Following the business meeting, the members and their ladies were entertained by the East Midlands Gas Board at luncheon at the Stamford Hotel, after which the afternoon was enjoyed in visiting Elton Hall, Oundle, Rutlandshire.

BRITISH STANDARDS YEAR BOOK

THE 1952 edition of this valuable reference work has just been published. It contains a complete list of the 1,800 British Standards current at March 31, 1952, with a brief description of the subject matter of each. A subject index simplifies reference.

The Year Book also gives particulars of the membership of the General Council and of the Institution's divisional councils and industry standards committees. These industry standards committees, 59 in number, each represent a major British industry through whom the work of drafting British Standards is delegated to some 2,200 technical committees and sub-committees. In addition 20 special committees, some of an advisory category, are also listed.

Copies of the Year Book may be obtained from the British Standards Institution, 24, Victoria Street, Westminster, London, S.W.1, price 7s. 6d.

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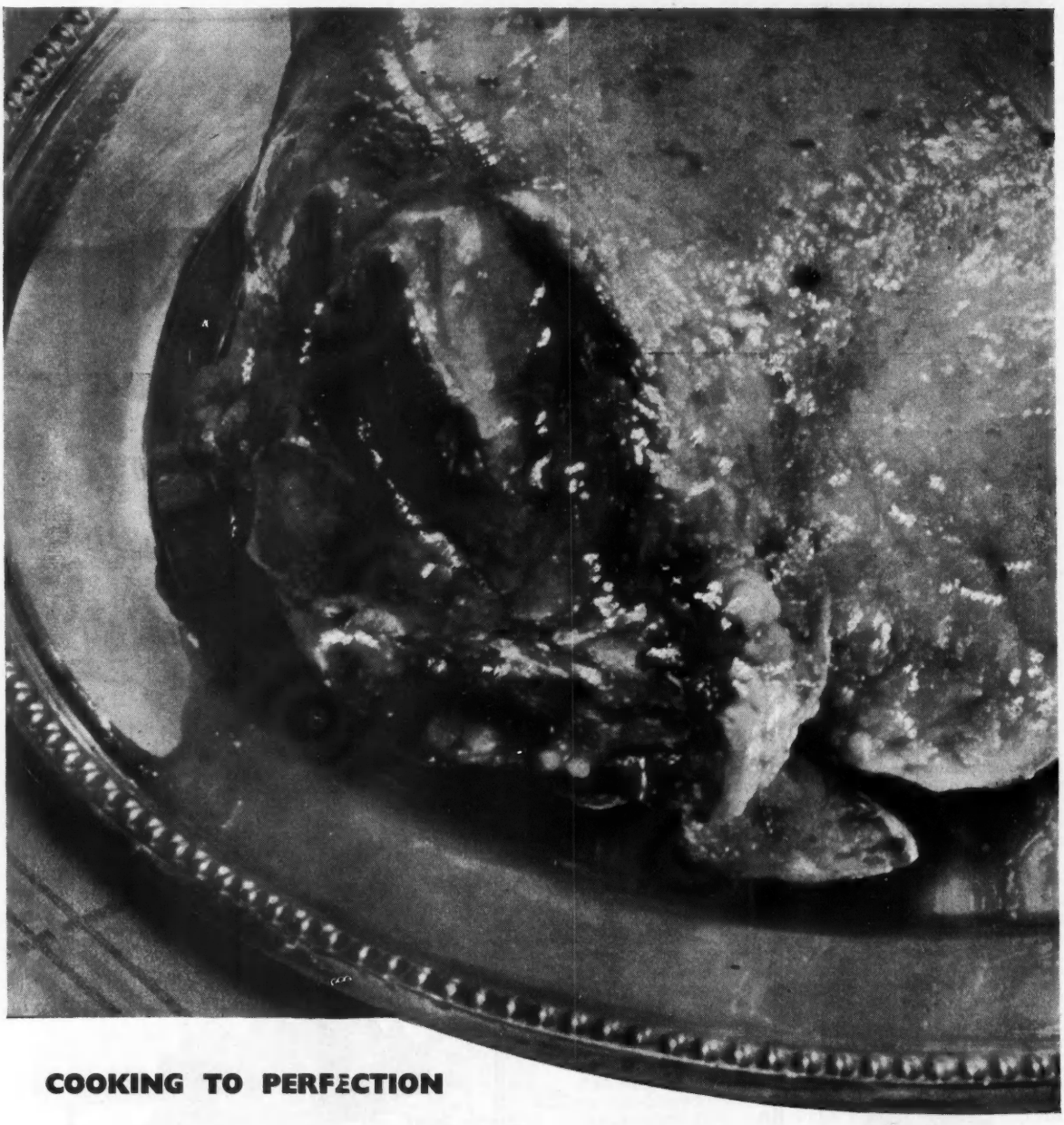

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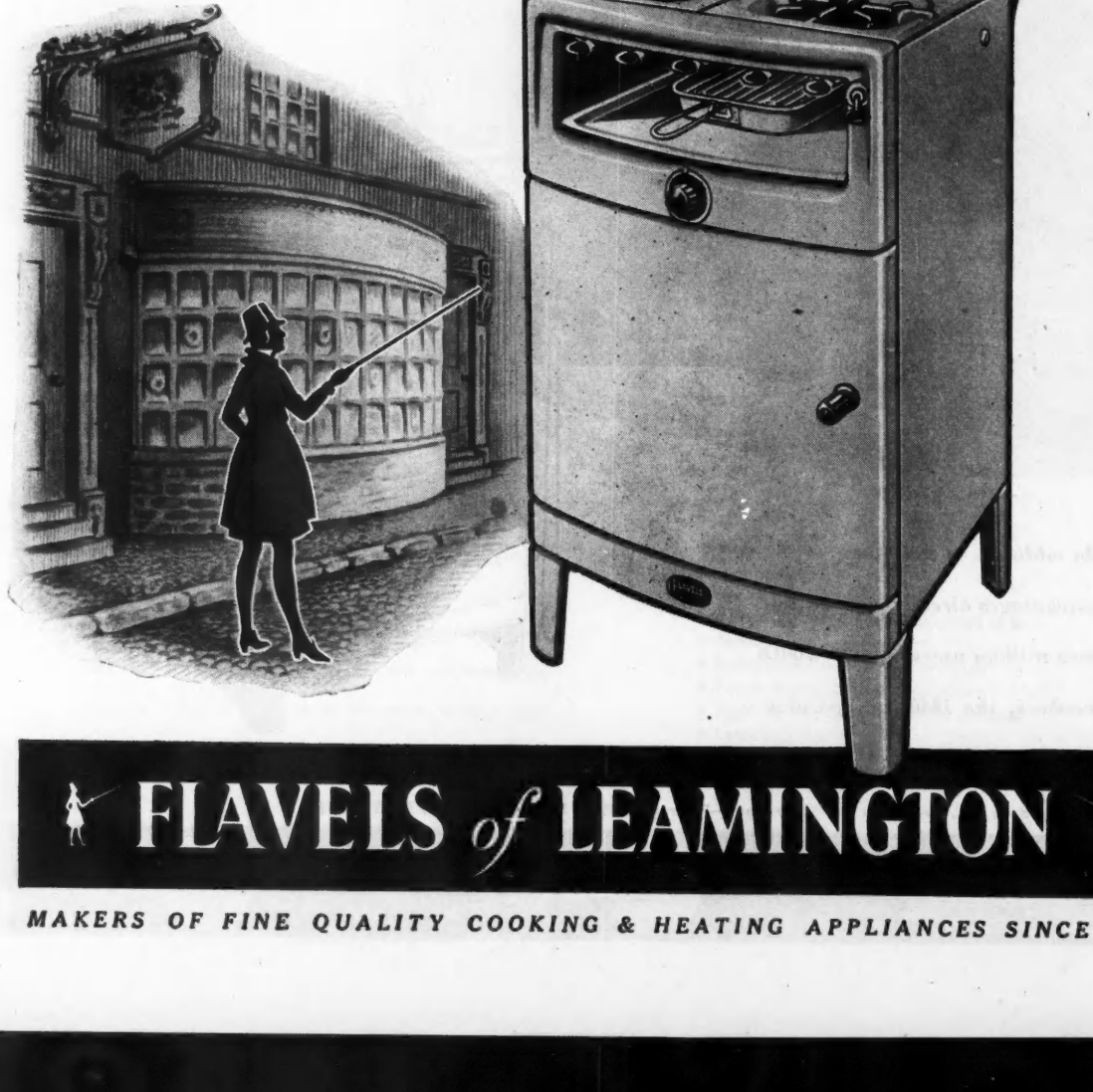

FLAVELS of LEAMINGTON

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LIVERPOOL LIGHTING

ON the occasion of his re-election as Chairman of Liverpool Corporation Lighting Committee, Alderman A. Critchley revealed that the department dealt with 33,000 lamps in 1,000 miles of streets and passages, in addition to other works, including the maintenance and operation of the electrical works in the Queensway tunnel which links Liverpool and Birkenhead.

Gas street lighting was slowly diminishing, but it still rendered a very real and important service. Alderman Critchley mentioned that the air raid warning system was practically re-established, while the main work of street lighting had considerably progressed during the year.

The general position last year was that there were 20,496 electric and 10,656 gas lamps lighted, making a total of 31,152, compared with the pre-war year's total of 33,170 (17,989 electric and 15,181 gas) lamps.

The position relating to the gas lamps was difficult as 4,525 were still unlighted, 2,000 of which were in passages and were being tackled as rapidly as possible. Practically all the pre-war electric lamps had been lighted together with about 2,500 new ones mostly on new housing estates and roads.

Malicious damage was still causing trouble. Last year 32,023 glass sides and 2,108 electric bulbs were replaced at a cost of £4,300, while the previous year £4,000 was spent in this connection.

Offenders when caught were now being prosecuted on the advice of the police, while a propaganda film had been exhibited in many of the city's cinemas.

Their immediate problem, said Alderman Critchley, was the complete restoration of the side street and adopted passage lighting and a general improvement in that matter, and then improvements in main road lighting where it was out-of-date on roads where traffic had increased to such an extent as to make such roads dangerous.

Shropshire Show

THE West Midlands Gas Board had an attractive display at the Shropshire and West Midlands Agricultural Show, the theme being 'Gas and Coke —the Extra Hands.' The central feature, which was illuminated from behind the facia board, illustrated the use of by-products on the farm, including fruit tree washes, wood preservatives, sheep dips, and fertilisers. Gas for grain and grass drying and in the egg hatchery was also illustrated.

Gas and coke domestic appliances were well displayed in circular bays, and the home service section was represented by a fruit bottling advice bureau. Visitors displayed a lively interest and many enquiries were received.

Eastern Tennis.—The annual inter-gas tennis tournament between the Bedford, Cambridge, Northampton, and Watford areas was staged at Cassiobury Park, Watford, on June 14, when the challenge shield was won by Watford. After the tournament a dinner was held at Radiant House, Watford, Mr. T. C. Battersby, General Manager, Watford division, Eastern Gas Board, presiding. Mr. Battersby gave the toast of the guests, response being made by Mr. H. B. Taylor, General Manager, Leicester and Northants division. Presentation of the challenge shield was made to Mr. A. Hall, the Watford captain, by Mrs. Battersby.

World Power Conference

THE annual report of the World Power Conference for 1951 has been published. Copies can be obtained from the offices of the British National Committee, 201, Grand Buildings, Trafalgar Square, London, W.C.2, price 1s. 6d. post free.

At the annual general meeting of the British National Committee, on May 23, Sir John Hacking, Deputy Chairman (Operation), British Electricity Authority, was elected to succeed Mr. Harold Hobson as Vice Chairman and Mr. F. G. Brewer, Secretary of the Gas Council, was elected Hon. Treasurer to succeed Colonel C. M. Croft. Mr. Hobson, formerly Chairman of the Central Electricity Board, and Colonel Croft, a Past President of the Institution of Gas Engineers, had filled their respective offices since 1946. They did not offer themselves for re-election. The other officers of the Committee are: Sir Vincent de Ferranti, M.C., Chairman, and Dr. A. Parker, C.B.E., Hon. Secretary. The members of the Executive Committee are: The four officers, Professor F. H. Garner, O.B.E., Sir William Halcrow, Mr. Harold Hobson, Mr. Henry F. H. Jones, Mr. B. L. Metcalf and Mr. J. A. Oriel, C.B.E.

The technical programme of the next World Power Conference—a sectional meeting to be held at Rio de Janeiro from July 25 to August 8, 1954—is given in an appendix to the annual report. Preparations for British participation have already begun. A papers committee has been appointed under the Chairmanship of Sir John Hacking, Vice-Chairman of the British National Committee and Deputy Chairman (Operation) British Electricity Authority.

This year, the International Executive Council of the World Power Conference will meet at Chicago on September 4, by invitation of the United States National Committee and of the 'Centennial of Engineering Convocation 1952,' which is being organised by the American Society of Civil Engineers in association with other American engineering institutions. The United Kingdom participants are expected to be Sir Vincent de Ferranti, Sir John Hacking, Dr. A. Parker, Sir William Halcrow; and Mr. C. H. Gray, Secretary of the Council.

GAS ON THE FARM

IN *Gas on the Farm*, the Gas Council has revised and brought up to date an earlier publication of the same name and has re-issued it in time for the agricultural show season. A colourful cover depicts Mr. Therm as a straw-sucking 'farmer's boy' armed with hay-fork and leaning on a gate of curious design inasmuch as it obviously will not open. However, this little piece of artist's licence may be forgiven in view of the attractiveness of the cover.

Some of the illustrations are the same as in the previous edition, though there are several new ones and much of the text has been re-written. Pride of place is naturally given to milk production, and it is shown how gas equipment helps to maintain the very high standards of purity and cleanliness required in modern dairying practice—from water heating, steam raising, sterilising and pasteurising to overhead panel heaters for the cowhouse. It is stated that one farmer recently claimed increased milk yield from cows kept warm indoors during the winter months. This may well be a fact in herds which lie in throughout the winter, though there will be differences of opinion as to the wisdom of artificially heating cowhouses when herds lie in at night only. Nevertheless, we are glad to note this further use for gas on the farm and regard it as particularly suitable for rearing young stock, both calves and pigs, especially if fitted with thermostatic control. Too many young stock become bad doers as a result of cold winter quarters.

Next comes gas on the poultry station, where reliability and absolute precision of temperature are of paramount importance. It is of interest to note that one of the largest poultry breeding areas—Hebden Bridge, in Yorkshire, which hatches some 7 mill. chicks each year—consumes nearly 50,000 therms of gas annually. Examples of gas heated incubators and brooders are illustrated, while further applications are for heating battery houses for mash warming, and for singeing poultry for market.

Grain and grass drying are coming very much to the fore in present-day agriculture concurrently with the greater adoption of the combine and of scientific grassland farming, whereby a much earlier cut is taken followed by one or two more cuts as the season progresses. Gas fired drying equipment is described and illustrated. For the horticultural grower accurately controlled, trouble-free glasshouse heating is briefly covered, while the final section of the booklet is devoted to domestic applications of gas in the farmhouse on the theme of bringing town standards of comfort and convenience to the countryman's door. We hope that gas boards will make the greatest possible use of this valuable publication at agricultural shows and rural events generally.

PRESS AND LOCAL COMMITTEES

THE South Western Gas Consultative Council, which agreed by nine votes to eight at its March meeting not to invite the Press to attend meetings of the 11 local committees in its area, is to reconsider the question in September, after the committees have had an opportunity of expressing their views.

This decision, which was reached by the Council at Taunton on June 11, arose out of a letter from the Eastern Section (Region VI) of the Guild of British Newspaper Editors, in which Mr. L. G. Lansdown (Hon. Secretary) wrote 'The Guild, feeling that consultative councils represent consumers, regards the decision as a bad one and wishes to protest most strongly against it.'

Several members spoke in favour of admitting the Press, but one member questioned whether the matter could be re-opened so soon after the March decision, and another member took the view that there would be freer and more candid discussion if the Press were not present, and that consumers who made complaints would not always wish for publicity.

The Chairman (Councillor A. W. Loveys) said that in principle they were following local authority practice. Persons who brought matters before local committees would not want their names bandied about in the Press, and some information now given by sub-divisional managers would then be withheld. Unless the Council gave a directive to the contrary, he did not think they could object to local committees inviting the Press to their meetings. The Minister had said in the House of Commons that local committees were not open to the Press, following municipal practice.

The Council decided by a majority that local committees should be asked to send their views on the admission of the Press to the next Council meeting, when the question would be reconsidered. An amendment that local committees should, if they wished, invite the Press to meetings, was defeated by eight votes to six.

Gala Day at Birmingham

THE Birmingham division of the West Midlands Gas Board entertained some 4,000 employees, friends, and visitors from other divisions at its gala on June 7. The highlight of the athletic programme was the inter-divisional 100 yds. scratch race for the cup presented by the Chairman of the Board, Mr. G. le B. Diamond, and won by Mr. N. Walker, of Warwickshire division.

Several sections of Birmingham district provided stalls and features, including a Civil Defence demonstration, a cinema show by sales and service, a cake competition by home service, and a one act play by the dramatic section of the Social and Recreation Society. In addition to these attractions there was a thrilling display of trick-riding by a motor-cycle team and a brave show by the Birmingham Scottish Pipe Band.

After the presentation of prizes by Mrs. J. E. Wakeford, wife of the Birmingham Divisional General Manager, a most successful day closed with a concert and dancing.

Darlington Protest

DARLINGTON Corporation, which protested to the Northern Gas Board against increased gas charges, received a reply from the Northern Gas Consultative Council stating that the Gas Board, with the consent of the Consultative Council, had introduced, to meet higher costs, a uniform rate for the north-east industrial belt, which it was agreed had imposed an increase on consumers. The nationalisation of the gas industry would bring equalisation in prices and a better service to remote areas, although this might be done temporarily at the expense of the more fortunate towns. The Consultative Council said there would be no unfair discrimination against any towns.

The Corporation has replied that the increased charges had been brought into effect precipitately and had caused hardship to Darlington consumers.

Pensioners' Parties

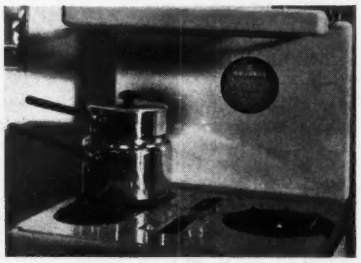
SOCIAL programmes of many of the sports and social clubs affiliated to the North Thames Gas Sports Association include an annual pensioners' party given by the employees for former employees who have been pensioned.

These reunions are attended with enthusiasm and pensioners travel from remote parts of the country to attend. Invitations are extended to all pensioned employees and their ladies.

Two such functions took place within a few days of each other—one at Fulham works and the other at Stratford works. The staff at Fulham were hosts to 84 guests while Stratford staff entertained 60 visitors. Many pensioners over 80 years of age travelled several miles to attend and at Fulham the oldest pensioner present was 85 years old Mr. J. H. Brien, a former bricklayer, who was pensioned in 1932 after more than 51 years' service.

The Seal of Service

TO further the goodwill of its customers and to give added publicity to the comprehensive home service facilities available, the Newcastle division of the Northern Gas Board now attaches a 'Seal of Service' badge to all new gas cookers fitted in the division.



The seal, which is embossed in brilliant red, with black background, offers to the customer advice and guidance in her own home in the use of the new cooker supplied, so that the best and most efficient results may be obtained.

Cheaper Gas in Belfast

BELFAST Gas Committee has recommended that the charge to domestic consumers in excess of 20,000 cu.ft. quarterly be reduced by 4½d. per 1,000 cu.ft., and a rebate for prepayment meter users of 5d. per 1,000 cu.ft. on gas used in excess of 15,000 cu.ft. in any clearance period. The concessions are estimated to cost the Department £3,500. Some 4,000 consumers will benefit. Mr. J. L. Hyslop, Engineer and Manager, pointed out that the use of gas in large quantities for domestic heating had become so common that there were many domestic consumers using much greater quantities than some industrial consumers.

Revenue for the year ended March 31 amounted to £2,170,704, and expenditure, which showed an increase of £222,336, totalled £1,981,130, giving a gross profit of £189,574. There was a net profit of £54,283—a decrease of £37,254.

The Gas Committee has decided to acquire a portion of ground at Shore Road, Greencastle, for the erection of two gasholders to be used for supplying the north end of the city.

GLASS MANUFACTURERS' CONFERENCE

REPRESENTATIVES of the Glass Container Industries of Denmark, France, Great Britain, Holland, Norway, Sweden and Western Germany met in Sweden in June, 1951, and established the European Glass Manufacturers' Federation. Dr. S. B. Bagley, C.B.E., well known in Great Britain and internationally as having held all of the major offices in the industry, was elected first President. The second meeting has just been held at Scarborough. Members exchanged views on common problems at the business sessions and inspected glassworks in Yorkshire.

It was in Yorkshire that an English engineer produced a bottle-making machine in 1887, but since the turn of the century there has been an unprecedented development of production in Great Britain and Western Europe. Britain's output of glass containers alone is over 25 mill. gross per annum and the industry, a large user of gas because of its cleanliness and controllability, supports many millions of pounds worth of export trade by providing the containers into which such exports as whisky and other drinks, foods, medicines and drugs are packed.

Summersons Book of Railway Sidings

It's 72 pages include blueprints, photographs, special designs, complicated layouts, railway accessories, glossary of railway siding terms, etc.

It is fitting that Summersons, the world's oldest railway siding engineers, should publish this comprehensive catalogue of railway siding designs, installations and accessories. The 72 pages include numerous blueprints and photographs of crossings, switches and turnouts, with examples of complicated and special designs, road rail layouts and large scale platelaying. Drawings and illustrations of numerous accessories are also included together with a complete and illustrated glossary of railway siding terms. If you operate railway sidings, this book is a vital adjunct to your drawing office. *Send for it, it's yours for the asking.*

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quality production

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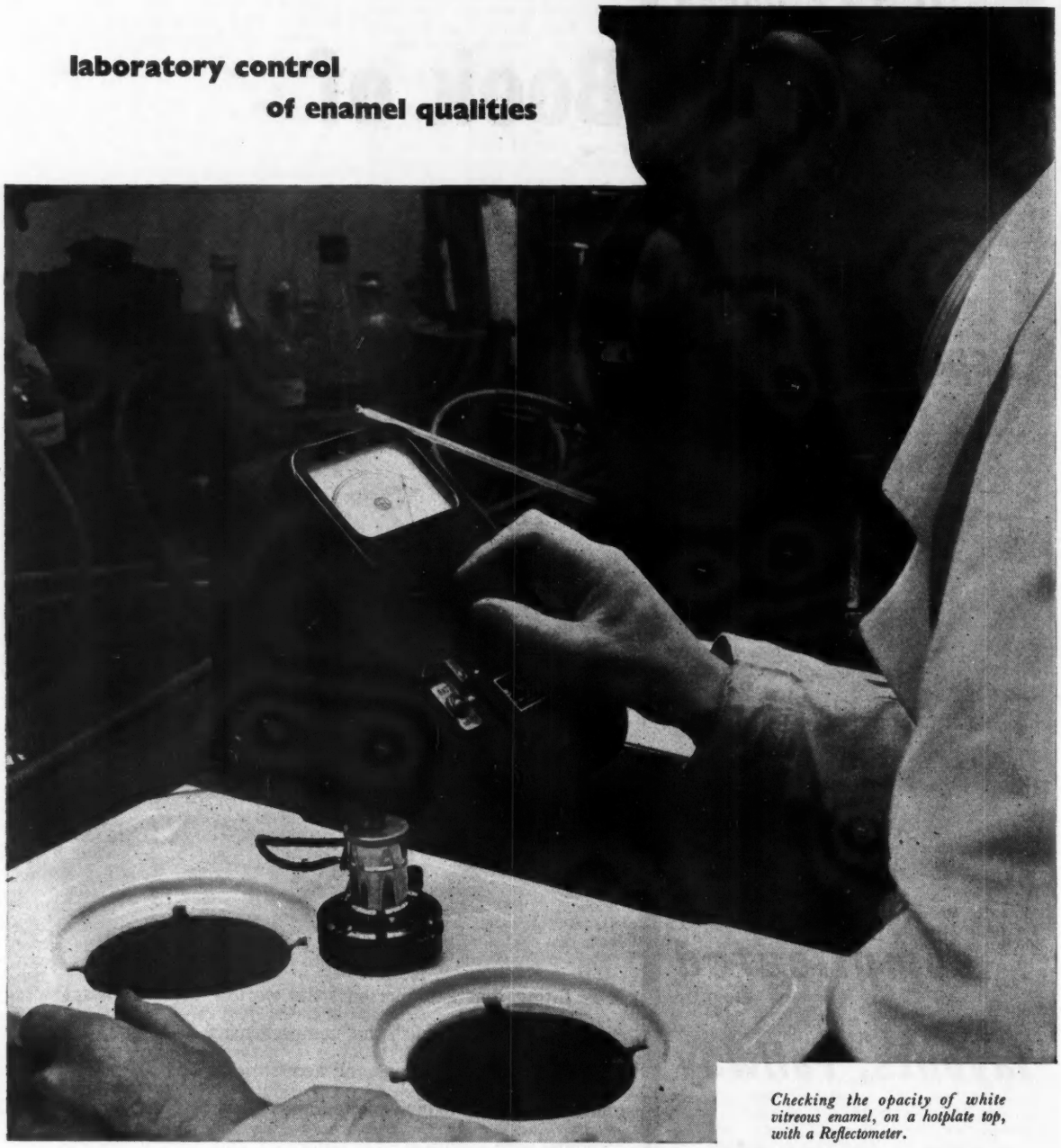

Checking the opacity of white vitreous enamel, on a hotplate top, with a Reflectometer.

The search for perfection in enamel qualities is a never-ending part of the experiments done in the Main laboratories. Every aid that science has devised is employed towards this end. For enamels, as applied to gas appliances, must be able to stand up to the rigours of constant daily use.

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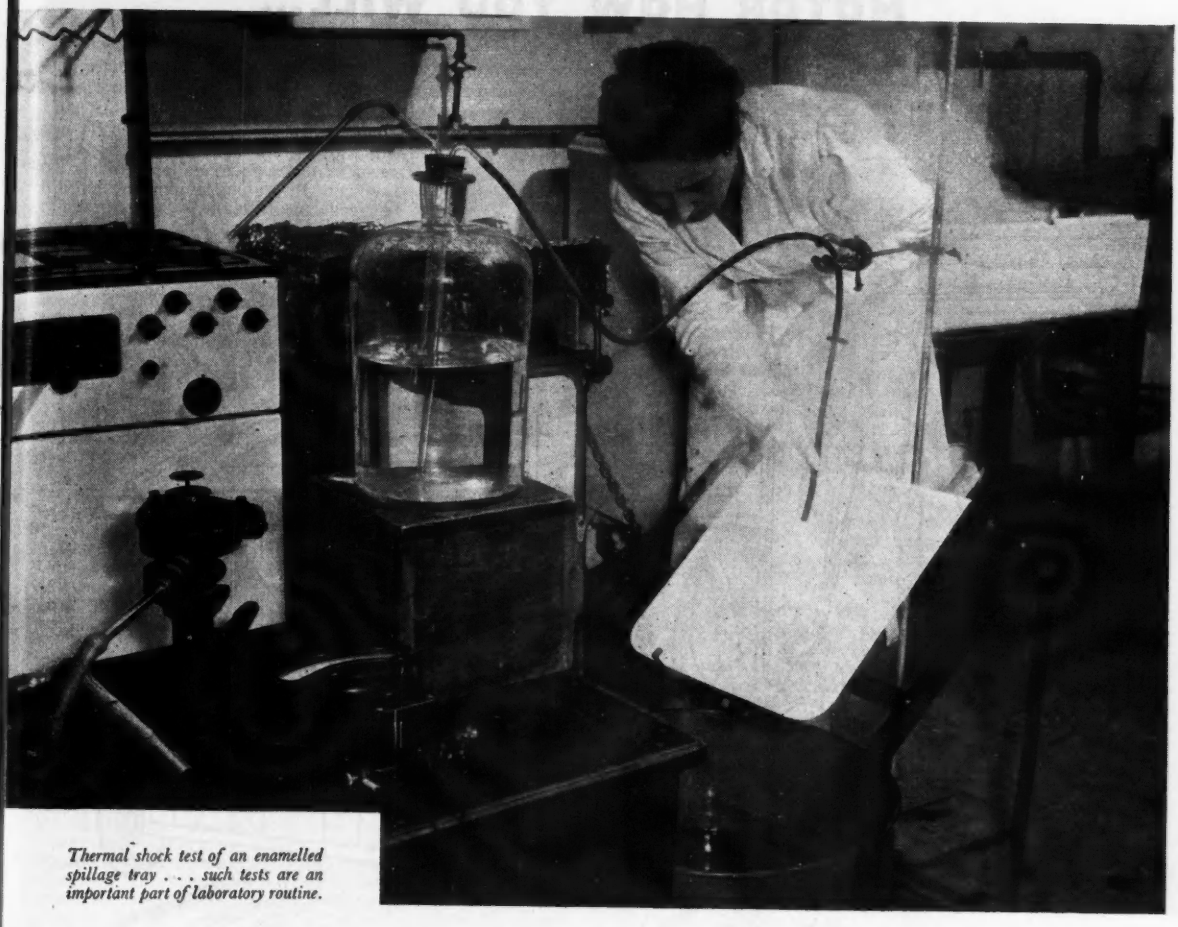

Thermal shock test of an enamelled spillage tray . . . such tests are an important part of laboratory routine.

main GAS APPLIANCES

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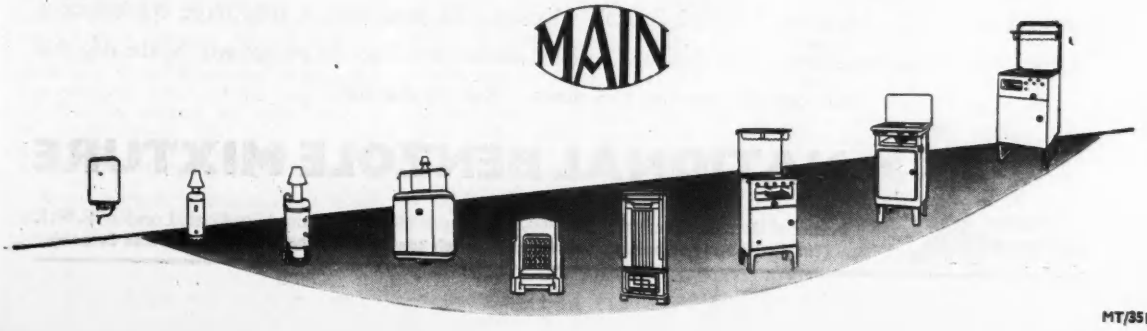

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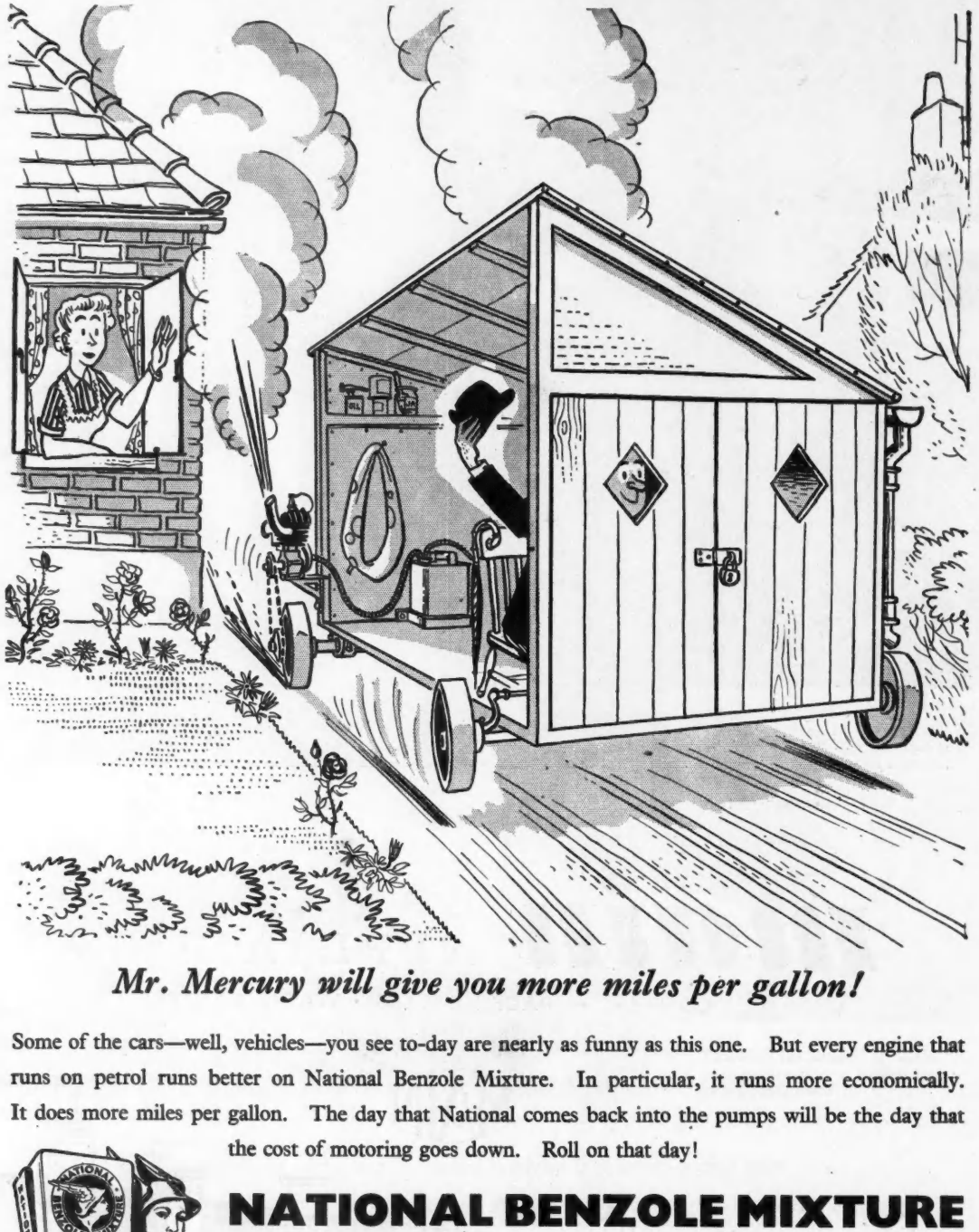

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Some of the cars—well, vehicles—you see to-day are nearly as funny as this one. But every engine that runs on petrol runs better on National Benzole Mixture. In particular, it runs more economically. It does more miles per gallon. The day that National comes back into the pumps will be the day that the cost of motoring goes down. Roll on that day!

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British Wood Preserving Association

Second Annual Convention at Cambridge

TWELVE papers, comprising eight from the United Kingdom and one each from the United States, Canada, Australia, and New Zealand, were presented at the second annual convention of the British Wood Preserving Association at Queen's College, Cambridge, from June 23 to 25. The Association, formed in 1929 for the purpose of collecting, promoting, and spreading knowledge of all methods of wood preservation, the protection of wood against fire, and to promote the standardisation of preservative specifications, numbers among its members representatives of learned societies and research bodies at home and overseas, tar producers and distillers, manufacturers of all types of preservatives, users of timber, operators of treating plants, specialist timber consultants, manufacturers of plant, architects, and builders. Its President is Major A. G. Saunders.

Use of Creosote

Dr. D. McNeil, Director of Research of the Coal Tar Research Association, in a paper on 'The Chemical Composition of Coal Tar Creosote,' said that despite the fact that the use of creosote for the treatment of timber goes back to the early Bethell patent of 1838, and despite the fact that its use is now so widespread, its chemical composition is still but imperfectly understood. Much new knowledge, generally however of a qualitative nature, has accumulated over the past few years as a result of the development and application of new methods such as high efficiency fractionation, absorption spectroscopy and chromatographic analysis to complex hydrocarbon systems.

The process of tar distillation is extremely flexible. By varying the nature of the primary distillation fractions and by varying the amounts of these fractions (before or after removal of by-products) incorporated in the blend, creosotes (*i.e.*, blends of tar oils) can be made to meet any desired specification.

International Differences

The specifications for creosotes for timber preservation which have been set up in various countries aim at ensuring that the blend of tar oils conforming to their requirements will have the desired qualities of deep and uniform penetration, high toxicity to wood destroying agents, permanence, ease and safety of handling and so on. Since different views are held by different authorities on the qualities of creosote which confer these desirable properties, specifications differ to some extent from country to country, but the flexibility of modern commercial tar distillation is sufficiently great to ensure that any reasonable specification can be met. Creosote supplied to B.S.S. 144 and to the specification of the American Wood Preservers' Association are generally blends of the naphthalene oil fraction (before or after removal of naphthalene), the wash oil and anthracene oil fractions with, in some cases, some of the heavy oil fraction.

Since creosote is essentially a blend of tar distillate oils distilling over the range 200-400°C., some idea of its chemical constitution can be obtained by considering what is known about the chemical structure of its parent substance.

Chemical Compounds

To date, well over 400 individual chemical compounds have been identified in coal tar and it is probably safe to say that an even greater number await discovery. However, even though our knowledge of the chemical make-up of tar is, as yet, so imperfect, we do know that the great majority of its components in the creosote range belong to a relatively small number of chemical types.

The fact that wood preservation creosotes produced by different high-temperature carbonising processes contain essentially the same types of chemical compound, although the proportion and distribution of the types varies, is not sufficiently realised. There is a tendency to refer to vertical retort creosote as 'paraffinic.' In fact the amount of paraffins which such creosotes contain is small although relatively large in comparison with the mere traces contained in coke oven or horizontal retort creosotes; it is, however, of a much smaller order than the amount in petroleum oils.

One of the most striking differences between oils derived from vertical retort tar and those from coke oven or horizontal retort tars lies in the much higher tar acid content of the former. These tar acids are mainly of the high-boiling water-insoluble type which are not likely to be leached out by weathering.

A Critical Survey

Many investigators, both in Europe and America, have attempted to assess the contribution which the various components or classes of components make to the overall value of creosote as a timber preservative. An extremely able review on this topic was given by P. B. Mayfield to the 47th annual convention of the American Wood Preservers' Association held last April in Chicago. From a critical survey of the results obtained in laboratory tests of creosote fractions and compounds against fungi, insects, and other wood destroying pests, he concluded that 'the toxicity of creosote is not due to one or a very few highly effective materials but is due to the many and varied compounds which occur throughout the boiling range. The value of creosote as a wood preservative depends largely on whether or not it remains in the wood under the conditions and throughout the period of service.'

Creosotes from all sources have been used for many years in all types of location in this country and the service records abundantly prove that, if applied properly, they are all equally effective for the preservation of timber.

New Zealand Paper

Mr. D. R. Carr, B.SC., Wood Preservation Officer, New Zealand Forest Service, in a paper on 'Preservation of Timber for Light Building Construction,' put coal tar creosote first on his list of preservatives commonly used in New Zealand, and said that of all the timber preserved throughout the world for outdoor purposes, approximately 95% was impregnated with coal tar creosote or similar preservative oils, and this was the main use for creosote in New Zealand. Creosote had been used to some extent for the treatment of some house-building timbers, but the colour, odour, paint-staining characteristics, and other disadvantages of creosote for this class of work ruled out the possibility of it ever being a serious competitor of the so-called 'clean preservatives' for house-building timbers.

Development of the wood preservation industry overseas had been closely associated with railway transportation systems, and in New Zealand also they were indebted to the railways for the earliest records of commercial wood preservation, mainly with coal tar creosote. The present state of knowledge of timber preservation the world over was based almost entirely on experience gained with preservatives used outdoors. It was, therefore, natural that in extending the use of preservatives to timber used for house construction, there had been a tendency to translate and apply, almost directly, to timber used indoors, the experience and knowledge gained from outdoor timbers. As the exposure conditions in the two cases differed vastly, there had been a further tendency to condemn out of hand for light building construction, those preservatives and processes which had been found unsuitable for outdoor use. More often than not, the performance of a preservative under outdoor conditions was unjustifiably taken as a measure of its suitability or otherwise for house construction. The approach to the preservative treatment of building timbers must be directed along independent lines.

Evaluating Preservatives

Mr. George M. Hunt, United States Forest Products Laboratory, Madison, in a paper on 'Evaluating Wood Preservatives,' said coal tar creosote was accepted everywhere as an outstanding preservative. It was not the only good preservative, for they now had a number of preservatives, either oil-borne or water-borne, that were highly effective, that were preferred to creosote for some uses, and that were increasingly competing with creosote. Nevertheless, coal tar creosote had become the stan-

dard with which other preservatives were compared. It was much better as a preservative, however, than as a standard, for the effectiveness of creosote could not be expressed in standard units and it varied widely under different conditions of use. Individual creosotes might also differ to some extent in effectiveness because of their considerable variations in physical and chemical properties. Nevertheless, when coal-tar creosote of normal character was impregnated into wood in accordance with good commercial practice, they knew they could depend on it for good protection against fungi, insects, and marine borers. Poor results were likely when the distribution of the creosote in the wood was poor, the retention per cu.ft. was too low, or the quality of the oil was low. As a result of generations of favourable experience, they were not greatly alarmed in the occasional instances when creosoted wood failed to give good service, for they knew the failure must be due to some fault in the treatment or to some abnormal circumstance rather than to an inherent weakness of creosote in protective ability. In this respect a new preservative was at a disadvantage, for if it failed to give the protection desired or expected, they were prone to place the whole blame on the preservative.

The Official Dinner

There were nearly 200 members and guests at the official dinner on the evening of June 24—too many to be accommodated in the College Hall as was the case at Gonville and Caius last year, and the function was therefore held at the Dorothy Restaurant. The toast of the Association was proposed by Colonel J. A. Graham (War Office) and responded to by the President, Major A. G. Saunders.

The toast of the guests was proposed by Mr. H. E. Hickson, of Hickson and Welch, Ltd. (Vice-President) and responded to by Mr. E. G. D. Norman (Natal), deputising for Dr. Glenn A. Greathouse (National Research Council, Washington), reported grounded at Gandar airport on his way to the convention, on behalf of overseas visitors, and by Brigadier Rawdon Briggs, C.B.E. (Ministry of Works) representing Mr. David Eccles, the Minister, on behalf of the home visitors. Mr. Stanley Robinson, Vice-President of the Association and President of the British Road Tar Association, proposed the toast of the University and City of Cambridge, response being made by Mr. A. L. Armitage (Queen's College) and the Mayor (Councillor S. T. Bull). The toast of the President was submitted by Mr. E. H. B. Boulton.

Among those who attended the convention were Mr. R. S. Johnson (Deputy Chairman, South Eastern Gas Board), Mr. C. E. Carey and Mr. R. F. Twist (S.E. Gas Board Chemical Products Department, Mr. L. W. Blundell (North Thames Gas Board), Mr. J. Davidson Pratt (Association of British Chemical Manufacturers), and Lieut.-Col. D. M. MacCormack (British Tar Confederation).

IN PARLIAMENT

Pipes and Pensions

PARLIAMENT has rather lacked direct gas interest of recent weeks, due in large measure, perhaps, to the considerable amount of time our legislators have had to devote to ironing out the Finance Bill. There did, however, emerge last week two items which should be recorded in this column, neither of which is without importance to the industry at the present time, as we have indicated in our heading.

Mr. FREDERICK WILLEY (Sunderland, North) indicated his concern at the shortage of gas pipes in his constituency, which, he suggested, threatened to jeopardise the progress of housing in Sunderland.

The Minister of Housing and Local Government, Mr. HAROLD MACMILLAN, stated that he and his right hon. Friend the Minister of Fuel and Power had considered this matter. Although some delay in providing a gas supply was, he feared, inevitable, the Town Council did not intend to let this interfere with the completion and occupation of houses.

Mr. WILLEY urged the Minister to reduce the delay to a minimum; because otherwise these houses would be completed without gas—and this was a very large estate. The Minister would realise that it was no good exhorting the local authorities unless they were backed up by a vigorous Department.

On the same theme, Mr. RICHARD EWART (Sunderland, South) wanted to know to what extent the housing programme was being retarded by the shortage of steel pipes and cement, to which Mr. MACMILLAN replied that his Department was doing all it could to overcome the shortages that existed in a few areas.

Mr. EWART described the shortage of steel pipes as a serious matter. It was affecting the housing programme inasmuch as gas services were provided in only a certain number of houses, while in other houses tenants were deprived of the amenities which they desired. In other words they are being offered a choice of gas or electricity in certain houses only, whereas, due to the shortage of pipes, there is only electricity in others.

Mr. MACMILLAN said the hon. Gentleman insisted on using the words 'steel pipes' as if they were a single kind of article. If he meant steel mains, there was a shortage and long delivery dates; but if he meant steel conduit pipes to carry electric wires, there were many other substitutes which could be used. Mr. EWART emphasised that he was referring to gas pipes.

In the course of the debate on the second reading of the Pensions (Increase) Bill the Financial Secretary to the Treasury (Mr. JOHN BOYD-CARPENTER) indicated that the measure did not cover former employees of the nationalised industries, the reason being that they were not Government Departments. Under the statutes put through by the late Government, they were set up as trading organisations with a large degree of independence; and conditions of work and so on were negotiated direct by the boards with the trade unions concerned.

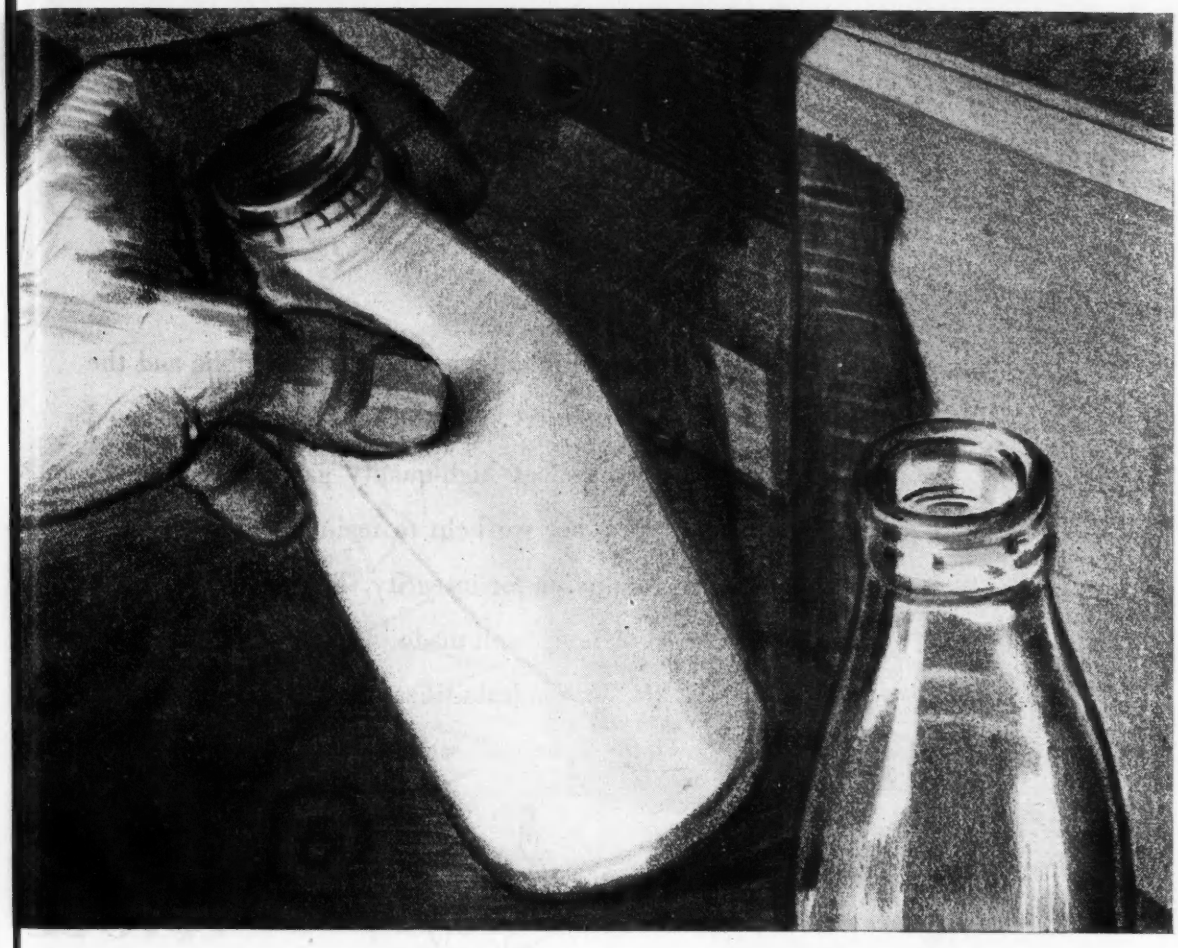
The position so far as our own industry is concerned was clarified by the Minister of Fuel and Power (Mr. GEOFFREY LLOYD) in a written reply to a question by Mr. W. R. WILLIAMS (Droylsden) who asked whether the proposed gas industry's staff pension scheme had received his approval; and when it would be brought into operation. Mr. LLOYD said the gas staff pension scheme was being considered and, subject to the clearance of some points of detail, he hoped to be able to give his approval shortly.

Contractors' Plant

The Minister of Works was asked by Mr. I. M. Horobin (for Oldham E.) on June 24, whether he had completed his review of the statutory control of the rates of hire of building and civil engineering plant. Mr. Eccles said he had consulted the principal organisation of users and hirers of contractors' plant. Maximum rates laid down in the Order would have had to be raised to cover increased costs of repairs, maintenance, overhauls and depreciation. The trade association concerned had given an assurance that it would recommend its members not to charge rates in excess of amended figures incorporating only certain actual increased costs and to maintain those rates during 1952 unless there were further increases in costs. On the basis of this assurance he had decided to remove the control as from August 1.

Gibbons Brothers, Ltd., announce that in future all their horizontal retort work will be handled from their London Office, 151/156, Palace Chambers, Bridge Street, Westminster, S.W.1.

Women's Gas Federation.—The inaugural meeting of the Nottingham Branch on May 16 was attended by an enthusiastic audience of over 100, and was addressed by the Lady Mayoress (Mrs. L. H. Wilson and Miss D. W. Pidsley, Headquarters Secretary of the Women's Gas Federation. The branch has now elected a committee under the Chairmanship of Mrs. Jean Wells, who is well known for her work on sociology in connection with adult education. An attractive programme of meetings has been arranged and with Miss Marjorie Heathcote, Nottingham's Senior Home Service Adviser, as Secretary, it is felt that the newly formed branch will have a most successful future.



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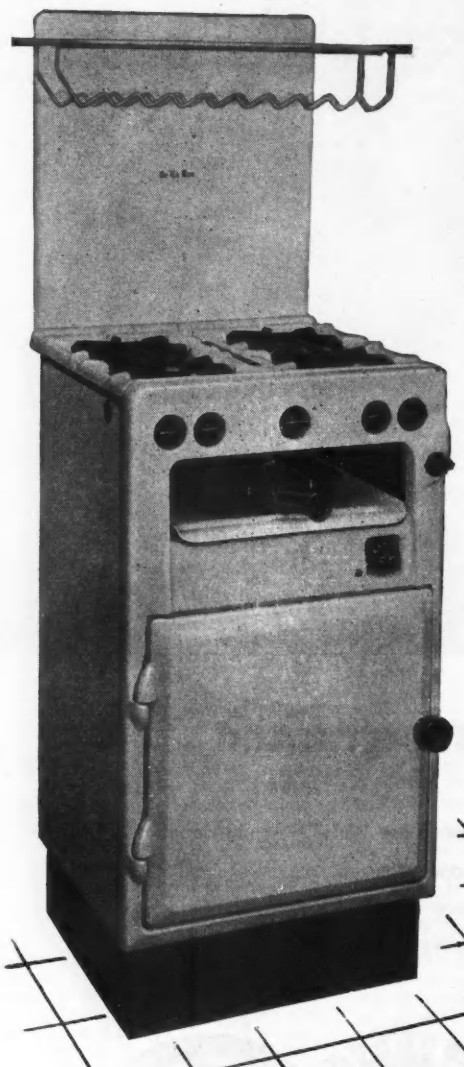

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The G4SS is the smaller cooker with 4 burners and a grill, soundly constructed in sheet metal and cast iron for hard wear and long life. The G5 is the large cooker with the imposing large-capacity oven. It is fitted with five burners and a grill and is available with or without a platerack. Both cookers are beautifully finished in a wide range of colours.

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Imperial Continental Gas Association

DETAILS of the operations of the more important subsidiary and allied companies are given in the report of the Directors of the Imperial Continental Gas Association for the year ended March 31. Results were summarised in the *Journal* of May 14 (p. 380) and reference to the Association's capital repayment and restoration proposals was made in our issue of June 4 (p. 563).

In Belgium, gas and electricity sales and profits continued to expand, but the main feature of the year was the improvement in the situation of the Cokeries du Brabant which earned sufficient profit to cover its accumulated losses of previous years of slightly over £400,000. Principally as a result of these improved earnings of the Cokeries du Brabant, the profits retained by the Belgian group were higher than in the previous year.

On January 30, 1952, the Association sold, for £619,210 payable in London, 32% of its French Nationalisation Bonds, but retained certain rights attached to them—namely the variable interest in excess of 3% and the premium on redemption. The rate of the premium on redemption cannot be finally determined until the date when the last compensation instalment falls due, June 1, 1956, but it is estimated that the amounts still receivable on account of capital and premium on redemption at the date of the Association's balance sheet will closely approximate to the book value £1,479,248, at which the balance of the Association's claim is carried therein, due allowance being made for the exchange guarantee payments which the Association will have to make to certain French interests in the British coal industry.

Compagnie Belge et Continentale de Gaz et d'Electricité (Contibel) showed a profit for the year ended March 31, 1952, of Frs. 59,610,039, which was placed to provide funds for group purposes.

For the year December 31, 1951, the Antwerpse Gasmaatschappij which distributes gas in Antwerp and in over 60 communes in the province of Antwerp, paid a dividend at the rate of Frs. 110 per share, compared with Frs. 90 for the previous year. Sales of gas increased by 5.3% and the number of consumers by 5,077. The network of mains was extended by 14.6 miles.

Electricité et Gaz de l'Agglomération Bruxelloise (Electrogaz) which distributes gas in eight large communes in and around Brussels, paid a dividend at the rate of Frs. 85 per share as against Frs. 72.50 for the previous year. Sales of gas and electricity increased by 6.2% and 5.6% respectively. The number of consumers increased by 2,571 for gas and by 2,033 for electricity while new gas mains and electricity cables were laid to the extent of 2.9 miles and 5.6 miles respectively.

Société Provinciale du Gaz et de l'Electricité (Provinciale) distributes gas in over 70 communes in the province of Brabant and in several communes in the provinces of Hainaut and Namur, and also distributes electricity in over 40 communes in Brabant and buys both gas and electricity in bulk for re-sale to other distribution companies. Profit available for dividend amounted to Frs. 51,330,000. Dividend was at the rate of Frs. 72.50 per share, the same as for the previous year. Consumption of gas and electricity in the Provinciale area of supply increased by 10.7% and 9.4% respectively. The number of consumers increased by 4,139 for gas and 2,712 for electricity. New gas mains were laid for a length of 24.4 miles while the electricity network was extended by 20.6 miles.

The Cokeries du Brabant produces coke, gas, and other by-products. Gas is sold in bulk to Distrigaz and tar is sold to the Société Chimique de Selzaete. During 1951, the continued improvement in the metallurgical coke market enabled this Company to dispose of its coke production at exceptional prices.

To meet the increased demand for coke, 20 ovens which had been put out of action were repaired and taken into service again during the second half of the year. Profit for the year amounted to Frs. 57,298,448.

Compagnie Continentale d'Appareils de Mesure (Contimeter), manufacturers gas, electricity, and water meters and gas water heaters and paid a dividend at the rate of Frs. 375 per share compared with Frs. 300 for the previous year. The year was chiefly marked by a large increase in output resulting from improved methods of production and increased productive capacity.

British Subsidiaries

Dealing with British subsidiary companies the report states that after providing £1,333 for taxation, Ewart & Son, Ltd., made a profit in 1951 of £9,539, thus reducing the loss carried forward to £10,121. The improvement is the result of increased sales during the earlier part of the year and higher prices, these being reflected in a 22% rise in turnover.

James Stott and Company (Engineers), Ltd., were no longer faced in 1951 with the accumulation of orders received in the immediate post-war period, and production was lower than in the previous year, both on this account and because of difficulties in recruiting skilled labour. Orders received showed an increase in spite of higher prices necessitated by rising costs. Several important canteen installations were carried out and the Company's equipment was well represented in various catering establishments at the Festival of Britain Exhibition, particularly by the coffee and tea making equipment in the specially designed kitchens at the Royal Pavilion. After providing £47,966 for taxation, the net profit amounted to £25,723, out of which a dividend was paid at the rate of £6 10s. per share, the same rate as for the previous year.

Mechanical Handling

IN contrast to many recent exhibitions, the Mechanical Handling Exhibition and Convention at Olympia, June 4 to 14, drew an attendance 40% higher than on the last occasion in 1950, the final figure for the 10-day run being 45,428. Overseas attendance was 3,508 compared with 1,298 in 1950; Press attendance was 385 and convention attendance 3,075, an average of 256 per session. Many exhibitors have already asked for space in the next exhibition in 1954. One of them, whose opinion was confirmed throughout the exhibition, said 'This has been easily the best of the three exhibitions. The feature of the attendance has been its completeness—that is to say, we have had every type of user, including all three services, from top-level executives to operators.'

An American visitor, Mr. Harold I. Miller, President of the National Pallet Corporation of Pittsburg, said: 'This is a better exhibition, better organised and better displayed than ours in the States or any exhibition I have seen.'

A spokesman of the organisers said orders and enquiries which had come to every exhibitor showed that mechanical handling aids were just what were required to boost production without great capital expenditure on new plant.

Coal Price Structure

CHANGES in the structure of coal prices by the National Coal Board during the post-war years have given rise to many enquiries from members of the Federation of British Industries. It has done its best to answer these enquiries as they arose. But it became evident that an explanation of the considerations on which these changes were based would be useful to members. Accordingly a booklet entitled *Coal: The Price Structure* has been prepared under the guidance of the Chairman of the F.B.I. Solid Fuel Panel, which has been in continuous negotiation with the National Coal Board from the inception of the changes.

The Panel agreed with the Coal Board that coal prices should be brought into a closer relationship with value, and that the distortions produced by successive flat rate increases during the war years should be eliminated in a series of stages now completed. The Panel also discussed with the Coal Board the principles of the new price structure scheme and a measure of agreement was reached on the major issues. The booklet shows members how the price of the coals they use is arrived at. The Technical Department of the Federation advises members on difficulties as a consequence of these revisions in the price structure.

Capital Investment

THE *Financial Times* reports that the Government may soon relax some of the restrictions on capital investment by industry. It is expected that any benefits granted would particularly affect such industries as heavy technical and mechanical engineering industries and also household goods manufacturers where opportunities for export are present.

International Gas Union

GAS PRODUCTION AND STORAGE: STEAM AND POWER : EFFLUENTS

WE turn to the technical proceedings at the Brussels meeting of the International Gas Union, and of necessity (not having the financial assistance of UNESCO) we have to place a limit to our record. This is not to decry the value of the papers presented or to fail in our appreciation of the vast amount of care and time expended in their preparation by the individual authors. As we said in our editorial last week, of the papers, France provided 6; Great Britain 5; Belgium and Holland 4 each; U.S.A., Italy, Sweden, Switzerland, 2 each; Austria 1. Later we shall give a pointer to the general significance of these technical contributions, singling out for particular comment the more striking of the technical developments discussed. At this stage we confine attention to the papers from Great Britain.

'Alternative Methods of Gas Production' was the title of a paper by J. E. Davis, Chief Technical Officer of the South Eastern Gas Board. In this the author took note of a trend of thought in the gas supply industry which has become evident in recent years; enquired into the causes which may have stimulated that line of thought; noted the reactions so far as they are recorded at the present time, and suggested the manner in which these causes may shape future development. The paper was prepared in the belief that the establishment and development of an industry are the response to public need. Further, that the public need is not static but changing and an assessment of the nature of these changes so far as it can be made is a necessary condition of sound development. The paper did not seek to propound any single solution to the changing requirements of the public, but rather endeavoured to assemble alternative methods of gas production in perspective. The argument is developed mainly in regard to conditions existing in Great Britain, but with appropriate modifications it will hold for other countries too.

Very interesting were the author's comments on the place of petroleum as a raw material for town gas manufacture. Although the thermal value of oil used for gas manufacture represents little more than 2% of the thermal value of the coal and coke used for gas manufacture in Great Britain, gas from petroleum represents about 6% of the thermal value of all gas made. The proportion used in the future may increase, although it is not possible to visualise that petroleum will ever take the place of coal as the main raw material for gas manufacture in those countries where coal is indigenous and petroleum must be imported. The world reserves of oil are equal only to one-third of 1% of the coal resources. With oil shale included, the possible petroleum reserves barely reach 1% of the coal reserves, and it is clear that the gas industry must look in other directions than petroleum for its future supplies of gaseous hydrocarbons. Methane may well prove an important source.

R. H. Busbridge, Design Engineer, North Thames Gas Board, gave a paper on the selection and design of gasholders. This contribution comprised a small history of the gasholder as an item of gasworks plant with notes on the relative advantages and disadvantages of the various types in use, and the situations where they should be used as they appear to the engineers of the North Thames Gas Board. The paper has particular reference to the spirally guided gasholder as it has been developed in Great Britain, where it has been constructed and used in very large numbers since the beginning of this century and is now the type most commonly constructed. The design of a spirally guided bell is dealt with in some detail.

The North Thames Gas Board has a total of 167 gasholders with a total working capacity of 195 mill. cu. ft. They are of all types and ages, column guided and spiral guided water sealed holders; waterless gasholders and high pressure gasholders. The water sealed type are in tanks below ground or in steel tanks and cast iron tanks above ground, and it is particularly noteworthy that a large number of the tanks are of brick and concrete construction and were built up to 100 years ago. In one case, a tank built 120 years ago is still in use today. These tanks are still perfectly sound and are quite suitable for use with new holders. Of the 46 spiral guided holders in the North Thames Gas Board area, 14 were constructed in existing below-ground tanks.

Steam for Gas-making

In a paper on 'Steam Power in the Gas Industry,' L. J. Clark, B.E.M., also of the North Thames Gas Board, commented that the increasing use of steam as the principal medium for energy conversion in the gasworks of Great Britain has led to a growing demand for steam power plant, and it may have been expected that the fuel consumed for steam raising would have increased proportionately, with consequent ill effect on the fuel efficiency of the works as a whole. Fortunately, however, the growing demand for power has been accompanied by great improvements in the efficiency of steam generation and utilisation, with the net result that during the last 30 years there has been a marked reduction in the overall fuel usage for raising steam. The author continued: Although the gas industry was established before the advent of the steam engine, it was not many years before steam power found a useful place on the gasworks and one which has steadily grown in importance until at the present day it is probably the most vital service of the works. The fuel used for firing the early shell-type boilers represented a significant proportion of coke produced by the carbonising plant, and by the early part of this century it had grown to a consumption of more than 20% of the coke produced. Subsequently, the advent of the waste heat boiler as an auxiliary for both the carbonising and carburetted water gas processes led to substantial fuel economies, and, although the demand for steam continued to rise, it became possible to supply more than half the requirements from the waste heat boilers.

The efficiency of steam utilisation was also increased by the adoption of high pressures and temperatures, and at the present day it is not uncommon to find pressures ranging from 300 to 500 lb. per sq. in., and temperatures from 650° to 750°F.

Other means of energy conversion were developed in conjunction with the steam prime movers which proved advantageous for particular applications. These included pneumatic and hydraulic machinery and, most important of all, the electric generator and motor. The simplicity, cheapness and high efficiency of distribution and conversion of electrical energy to mechanical power led to a very rapid expansion in its use, and at the present day it is employed almost exclusively for providing mechanical power for all plants and processes on the works.

In spite of the great improvements that have been made during the last decade, the cost of providing the steam and electric power services on the gasworks is a substantial item of production expenditure, and the amount of fuel burnt under boilers in the gas industry is equivalent to more than 1% of the coal mined in the country. In the case of the works in the North Thames Gas Board's area, the direct charges associated with steam and power production vary from 2½% to 10% of the total direct costs of the works. This wide variation in steam and power charges is dependent upon differing local conditions and such factors as:

(1) The size of the works and geographical location of the plants.

(2) The type of carbonising plant installed and the extent to which waste heat recovery is practised.

(3) The relative capacities of the base load and seasonal load gas manufacturing plants in the form of carbonising and carburetted water gas plant and various

forms of complete gasification units operating on solid or liquid fuels.

(4) The suitability of the direct-fired steam-raising plant for burning coke breeze, and the extent to which it is used.

(5) The effectiveness with which the steam and power services have been modernised and co-ordinated as a whole in relation to the particular gas making processes employed.

(6) The load factor of the gas production plant and the pumping pressures required for gas transmission and distribution.

(7) The extent to which the processes of benzole recovery, gas drying, liquor concentration, or sulphate manufacture are practised.

The losses associated with extensive steam distribution systems and direct supplies to small prime movers may be surprisingly high, and the general aim of any scheme for modernisation should include the substitution of electric motors for all small and scattered prime movers, the grouping of all steam raising and consuming plants within the smallest possible area, and the fullest use of high-pressure steam in large back pressure or pass out turbines for driving centralised pumping plants and electric generators prior to supplying the needs for process and heating steam. As electricity would be used for driving the majority of plant ancillaries, handling equipment, and auxiliary machinery, great care is required in the initial layout and design of electricity supply systems to give maximum reliability while securing the benefits of high voltage distribution through ring mains adequately protected against local faults and with a liberal capacity for future development.

In some cases where plants are situated on remote sites, or are run intermittently, and incur a power demand of low load factor, it may well prove advantageous to install oil engines, but under present conditions it is not likely that the gas engine could prove competitive.

Self-Supporting Systems

Careful surveys of the requirements of works with continuous vertical retorts have shown that, under the best conditions, it is possible for the entire works to be made self-supporting in steam and electricity generated entirely from waste heat, and modern carburetted water gas plants can be made to provide more than their own requirements and become exporters of power to the general works system. Such surveys have also shown that on the majority of existing works the potential savings and improvements in efficiency that could be achieved by careful planning and modernisation of the steam and power services are quite substantial, and probably greater than those obtainable by any other direct means.

In the case of works with static carbonising systems which do not provide sufficient waste heat steam to meet the overall requirements, substantial economies can be effected by careful matching of the direct-fired steam boiler characteristics to those of the steam load, thereby ensuring that the most efficient, but expensive, boilers are operated on a good load factor, leaving the simpler, but less efficient, units to deal with the load peaks.

The advent of the industrial gas turbine has opened up new possibilities for improving the efficient utilisation of waste heat from carbonising plants, and, although no machines are yet in commission, it would appear that the amount of electricity that can be generated in this way is likely to be about twice that obtainable from the normal steam cycle while at the same time providing sufficient process steam for the normal requirements of carbonising plant. The oil-fired gas turbine may also show up to advantage for large prime movers serving as standby units for operating at low load factors.

Disposal of Gasworks Effluents

A note on the disposal of gasworks effluents was contributed by the Institution of Gas Engineers. At a meeting of the Council of the International Gas Union, held in Brussels in February, 1950, it was decided to request the Institution to obtain information about methods of disposal of gasworks effluents in the various member countries. A questionnaire was therefore sent out to members and replies have been received from Austria, Belgium, France, Holland, Italy, Sweden, Switzerland, and the United States of America.

In the case of the last-named, the questionnaire was not answered in detail, since comparatively little coal gas or coke oven gas is used in the United States. The main disposal problem seems to be the water from the oil-gas tar separators. The discharge of wastes is regulated by the Water Pollution Control Act of 1948 (Public Law 845). This is a General Act and has the object 'to recognise, preserve, and protect the primary responsibilities and rights of the States in controlling water pollution.'

A summary of the answers follows:

Types of Plant.—All these eight countries have ammonium sulphate plants which are in general situated only at the larger works. There are liquor concentration plants in Austria, Belgium, France, Great Britain, and Holland, but not in Italy, Sweden, or Switzerland. In Great Britain there are a few hot detarrers in the Midlands, but they cannot be said to be in general use throughout the country.

Methods of Disposal of Crude Liquor.—Belgium does not discharge any crude liquor, but all other countries discharge crude liquor to sewers and inland waterways, and all the maritime countries discharge to the sea. France, Holland, Italy, and Switzerland discharge to disused wells, quarries, etc. France and Italy mentioned the use of liquor on the land.

Regulations for Discharge of Crude Liquor.

Austria.—There are no national laws regulating the discharge of trade effluents. There are some local by-laws for Vienna of a rather general character.

Belgium.—Under a law of 1886 no discharge is allowed into a public waterway without the permission of the Ministry of Health. This legislation, though textually very strict, has been so loosely applied that many rivers and waterways are practically sewers. Consequently a new law was passed in March, 1950, which has not yet become effective, but which is expected to be applied firmly after a period of five years.

France.—Regulations were issued in 1935 concerning the discharge of noxious matter. A memorandum was issued by the Ministry of Public Health in 1950 on improving sanitary conditions in built-up areas. It is recommended that the biochemical oxygen demand of purified effluents should not exceed 40 parts per mill.

Holland.—It is stated that 12 works discharge liquor under regulations, but that these are not strictly applied.

Italy.—There is no special law about discharges of trade waters. Under a decree of 1931 for the protection of fishing, permission to discharge must be obtained from the prefect.

Sweden.—There are no regulations.

Switzerland.—There are only cantonal regulations concerning drinking water supplies.

Discharge of Spent Liquor.—The discharge of spent liquor takes place in the same way as the discharge of crude liquor. Fixed ammonia is recovered in Italy and usually in Belgium, but in the other countries the majority of the discharges contain fixed ammonia.

Regulations for Discharge of Spent Liquor.—No distinctions were drawn between the regulations (if any) for the discharge of crude liquor and those for the discharge of spent liquor. In Great Britain many legal agreements exclude the discharge of hydrogen sulphide to the sewers.

Dephenolation.—There are no dephenolation plants in Austria, Belgium, Italy, or Switzerland. There is one active carbon plant in France which is about to commence work. Phenols are extracted at Stockholm by means of benzole. In Holland the spent liquor from two works is used in coal washeries (probably in the froth flotation process for separating fines) and some phenol is absorbed by the coal. There are apparently no places outside Great Britain at which dephenolation is necessary on account of a heavy load on a sewage works or on account of abnormal pollution of local waterways. In Great Britain about 100 mill. gal. of crude ammoniacal liquor per year are washed with tar-oil at the dephenolation plant at Beckton. Elsewhere, benzole washing has been used and some new plants have been constructed in which the solvent is butyl acetate. Where dephenolation plants have been built it is usually in order to lessen the load on a sewage works.

Conclusions

In Great Britain there are several new laws designed to protect the waterways from pollution and it is expected that they will be strictly carried out. The same position may arise in Belgium and possibly in France, but elsewhere such legislation as exists does not seem to be very effective nor are any legal standards for quality in force. Discharge of crude and spent ammoniacal liquor to the

sewers is quite normal and no answers have been received (excluding Great Britain) which suggest that any special steps have had to be taken on account of the sewage system being overloaded. Dephenolation plants are extremely rare.

At the present time the final purification of nearly all the gas liquor which is not discharged untreated to waterways or to the land is by means of biochemical oxidation in presence of sewage at a sewage works. The gas industry should be on guard lest the losses on ammonia itself should be increased by unfair charges for disposal of the effluent. It should be recognised that the gas industry is very dependent on the sewage purification process in this matter and that research into alternative methods of disposal should be encouraged.

Education

The fifth contribution from Great Britain was a report by the Institution of Gas Engineers on education and training in the gas industry. This report includes information on the special courses which have been started in the gas industry in various countries to meet their particular requirements.

Company News

EXPANDED METAL

A one-for-four scrip bonus is to be issued by the Expanded Metal Co., Ltd., the new shares to rank for any future dividends. The issue applies to stockholders on the Company's register at July 4, and stock certificates will be available on September 15.

DRAKES, LTD.

Trading profit for the year ended December 31, 1951, amounts to £88,063 and net profit £39,371. Available for appropriation £56,323. Directors recommend dividend of 10%, less tax, leaving £51,861 to be carried forward. Chairman states that Company has had another successful year's trading, net profit having been maintained very nearly at previous year's level. A contributory pension scheme has been introduced during the year.

WOODALL-DUCKHAM

Making his first statement as Chairman of Woodall-Duckham, Ltd., Mr. T. Campbell Finlayson reported that the value of the work carried out during 1951 by the principal operating company of the group together with its subsidiaries attained the record figure of over £8,500,000. The consolidated profit and loss account for 1951 shows a total profit, subject to taxation, of £501,741, which compares with the figure of £467,590 for the previous year. Out of the year's net profits £119,099 has been retained in the business and £52,500 distributed in dividends. During the past year the principal operating company of the group, The Woodall-Duckham Vertical Retort and Oven Construction Company (1920), Ltd., has received a number of important contracts with a total value of over £12 mill. from the gas, coal and steel industries for plants for the carbonisation of coal and the production of gas, coke and other by-products. Among these may be mentioned the order to build a large coke oven plant for the East Midlands Division of the National Coal Board which is the largest order yet received by the Company. The new plants now under construction or on order for the gas, coal and steel industries will be capable of carbonising over 6 mill. tons of coal per annum. The principal operating company and its subsidiaries can look ahead with some confidence for several years as the value of the unexecuted orders exceeds £30 mill.

COLOMBO GAS AND WATER

Final dividend 5% (same), tax free, making 8% net for 1951 (same). Profit, after all charges, including tax, is £16,755 (£18,070). U.K. tax £1,309 (£1,783), Ceylon income tax £13,500 (£10,125), renewals £3,750 (£7,500).

ALLIED IRONFOUNDERS

A final ordinary dividend of 10% is recommended by the Directors of Allied Ironfounders to make 17½% for the year ended March 31, 1952. This is as for the previous twelve months, when there was a final dividend of 11¼%. An expansion of £135,599 occurred in the group's income last year to £1,936,302 from which has to be deducted tax of £1,078,618 (£1,018,003). Group trading profit was £1,827,994 (compared with £1,708,833 for 1951; investment income £90,949 (against £64,166) and profits relating to previous years and on sale of investments and property £17,359 (£27,704), making a total of £1,936,302 (against £1,800,703).

WHESSOE

A final dividend of 15% and bonus 5% on ordinary are announced by Whessoe, Ltd., Darlington. Both are payable on the 400,000 ordinary shares issued subsequent to March 31 last. An interim of 5% was paid in January, so that the total dividend on ordinary for the year to March 31, 1952, is 25%.

A final of 15, a bonus of 5 and interim of 5, together 25%, were paid for 1950-51 on the smaller capital.

Results for 1951-52 are given below:

	1950-51	1951-52
Net profit before tax	391,548	501,158
Taxes	226,760	305,000
Net profit	164,788	196,158
Works past serv. pens.	35,000	16,724
General reserve ...	55,000	100,000
Dividends (less tax):		
Preference ...	5,000	5,250
Ordinary (int.) ...	13,750	13,125
Proposed:		
Ordinary final ...	39,375	47,250
Ordinary bonus ...	13,125	15,750
Brought in	53,929	56,967
Forward	56,967	55,026

The Directors say with regard to the profits increase, that it is the company's practice to defer bringing into the accounts profits on contracts until they are completed. During the year more large contracts were completed than is usual.

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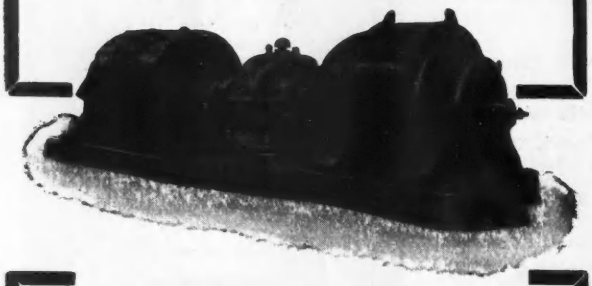

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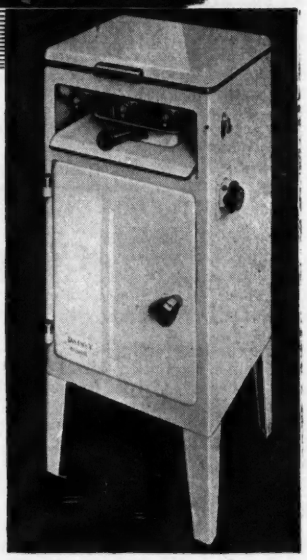

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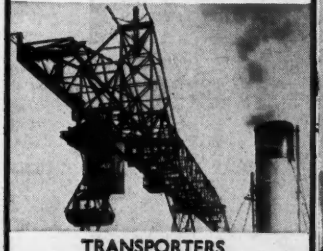

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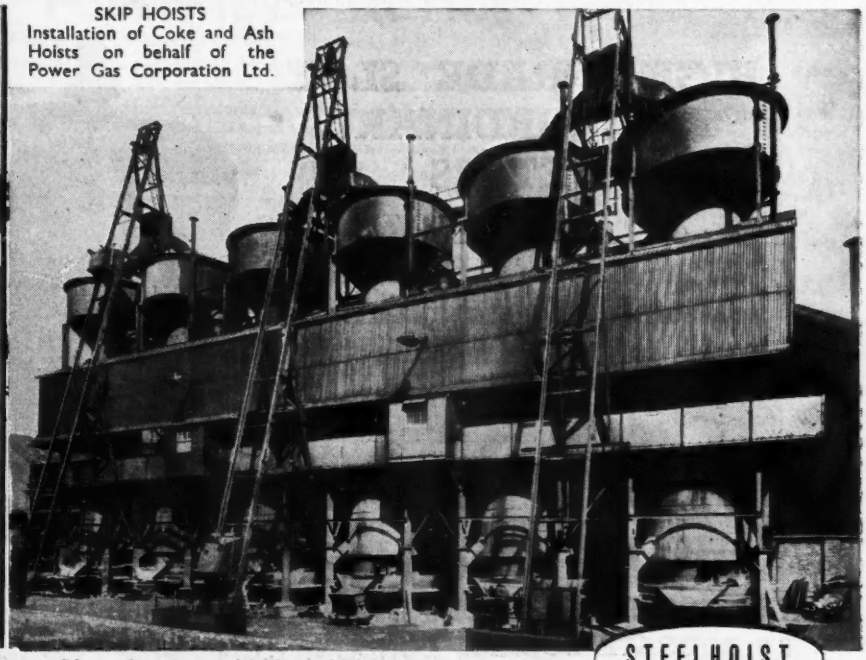

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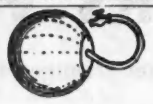

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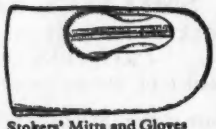

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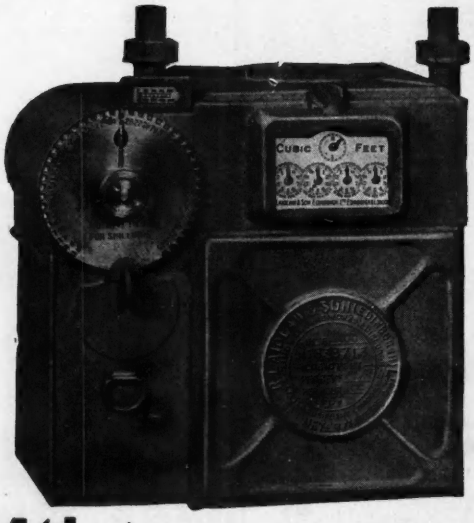

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EAST MIDLANDS GAS BOARD

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BERNARD CLARKE,
Divisional General Manager.

Lincoln.
June 23, 1952.

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EAST RETFORD UNDERTAKING

WORKS ENGINEER

APPLICATIONS are invited for the above position from suitably qualified persons who should possess the Higher Grade Engineering (Manufacture) Certificate of the Institution of Gas Engineers. Candidates should have experience of machine-charged horizontal retorts, carburetted water gas plant and general works practice. Initially, the Engineer appointed will be responsible to the Local Manager pending his early retirement. Later, he will be directly responsible to the Divisional Engineer for the operation of the East Retford and several small neighbouring works.

The salary will be within Grade A.P.T. X Provincial 'B' of the National Salary Scales (£630/730 per annum). Housing accommodation will become available in the near future.

The post is superannuable and the successful candidate may be required to undergo a medical examination.

Applications giving details of qualifications and experience together with the names of two referees should be addressed to the undersigned not later than July 7, 1952.

C. C. WOOD,
Divisional General Manager.

Commercial Street,
Sheffield, 1.

WEST MIDLANDS GAS BOARD

WALSALL AND DISTRICT DIVISION

SENIOR TECHNICAL ASSISTANT—

CANNOCK DISTRICT

APPLICATIONS are invited from suitably qualified persons for the above position.

Candidates should hold the Higher Grade Certificate of the Institution of Gas Engineers (Manufacture), be capable of carrying out all routine Gas Works tests, and preferably experienced in the operation and maintenance of Intermittent Vertical Retorts and Carburetted Water Gas Plant with modern ancillary plant.

The salary for the post will be in accordance with Grade VI (£475-£555 per annum), of the salary scales of the National Joint Council for Gas Staffs, commencing at a stage appropriate to experience.

The appointment will be subject to such superannuation regulations as the Board may, in due course, adopt, and the successful applicant may be required to pass a medical examination.

Applications, stating age, qualifications and experience and accompanied by the names of two referees, should be addressed to Mr. E. Hardiker, Divisional General Manager, West Midlands Gas Board, Walsall and District Division, Walsall Factory Estate, Tame Bridge, West Bromwich Road, Walsall, to reach him within fifteen days of the appearance of this advertisement.

F. H. CURETON,
Secretary to the Board.

WEST MIDLANDS GAS BOARD

WORCESTERSHIRE-HEREFORDSHIRE DIVISION

GENERAL FOREMAN—BROMSGROVE WORKS

APPLICATIONS are invited for the above position at a salary within Grade VI (£435 x £15—£480 per annum) (Conditions 1) of the salary scales of the National Joint Standing Committee for Intermediate Grades.

The person appointed will be required to control labour and to supervise the operation of the Horizontal Retort House and Ancillary Plant.

The appointment will be subject to such superannuation regulations as the Board may, in due course, adopt, and the successful applicant may be required to pass a medical examination.

A house will become available at a reasonable rental.

Applications giving age, present position and details of experience, together with names and addresses of two referees, should be sent to Mr. C. F. W. Rendle, Divisional General Manager, West Midlands Gas Board, 12, St. Nicholas Street, Worcester, to reach him within fifteen days of the appearance of this advertisement.

F. H. CURETON,
Secretary to the Board.

SALES REPRESENTATIVE required who has an established connection with maintenance side of gas industry. One already calling who could undertake extra representation would have excellent prospects. First class line. Apply: No. 113, *Gas Journal*, 11, Bolt Court, Fleet Street, London, E.C.4.

A LEADING MANUFACTURER of Gas Cookers wishes to engage a REPRESENTATIVE, who would be required initially to spend some months undergoing specialised training in the factory. Applicants must be Corporate Members of the Institute of Gas Engineers and should be between the ages of 25 and 35. The position carries an adequate salary, with excellent prospects of advancement and a full pension scheme is available. Replies marked "Private and Confidential" to Personnel Manager, No. 114, *Gas Journal*, 11, Bolt Court, Fleet Street, London, E.C.4.

NORTHERN GAS BOARD

CARLISLE, WORKINGTON AND

PENRITH DIVISIONS

APPLICATIONS are invited from suitably qualified persons for the following appointments on the Sales Staff within the Cumberland Group.

(1) ASSISTANT TO GROUP SALES MANAGER.

Candidates should have sound practical training and experience in all aspects of showroom and district sales work, and will be required to act as liaison between Local Authorities, Architects, etc., and the Group. The salary will be within the Grade A.P.T. VII, Provincial 'A', initial placing according to qualifications.

(2) TWO JUNIOR SALESMEN.

Candidates should be not less than 20 years of age, and will be engaged upon general showroom and district sales duties. Salary for the posts will be within Grade A, Provincial 'A' of the Salary Scales of the National Joint Council for Gas Staffs.

(3) HOME SERVICE ADVISER.

Candidates should be qualified in Domestic Science and capable of conducting Demonstrations and Lectures on Domestic Subjects. Duties will also include District Home Service Calls and instructions in the use of gas appliances. Salary within Grade A.P.T. V (female).

The above appointments will be subject to such superannuation regulations as the Board may in due course adopt and the successful candidates may be required to pass medical examinations.

Applications, stating age, qualifications and experience and giving the names of two referees, should be submitted within fifteen days of the publication of this advertisement to:—The Northern Gas Board, Cumberland Group Sales, 9, Victoria Place, Carlisle.

PATENTS

KINGS PATENT AGENCY, LTD.
(Director, B. T. King, A.I.M.E., Patent Agent). Advice, Handbook, and Consultations free. 146a, Queen Victoria Street, London, E.C.4. 'Phone: City 6161.

MISCELLANEOUS

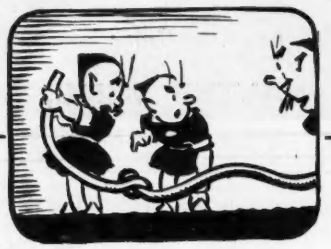
SMALL single truckloads and larger quantities of good ROUGH BREEZE from any gasworks, large or small, in the United Kingdom required by merchants paying own railway tolls. Cash price and particulars to No. 9378, *Gas Journal*, 11, Bolt Court, Fleet Street, London, E.C.4.

WATER-CONTENT TEST—3 MINUTES— Already in use in the gas industry, "SPEEDY" MOISTURE TESTER gives accurate results with coal, coke and ash, and many chemicals. Needs no electricity; no skill. Portable. Write for illustrated brochure or order direct £24 10s. 0d. complete—Thos. Ashworth & Co., Ltd., (Dept. G.J.), Basket Street, Burnley, Lancs.

PLANT FOR SALE & WANTED

MOBILE AIR COMPRESSOR for sale, ARMSTRONG WHITWORTH, 3 take offs. Direct coupled to Dorman petrol engine. 100 c.f.m. at 100 p.s.i. Dennis Lorry Chassis with enclosed cab. Photo, F. J. Edwards, Ltd., 359, Euston Road, London, N.W.1. EUSton 4681.

WANTED:—REGULAR SCRAP GAS METERS AND PARTS. Best prices paid. Offers to:—Mitcham Smelters Ltd., Red House Road, Croydon, Surrey. *Tel.*: THOrnton Heath 1033, (Private Branch Exchange).



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Some clown's tied this pipe in a knot!
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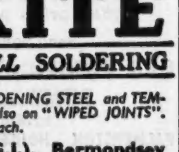

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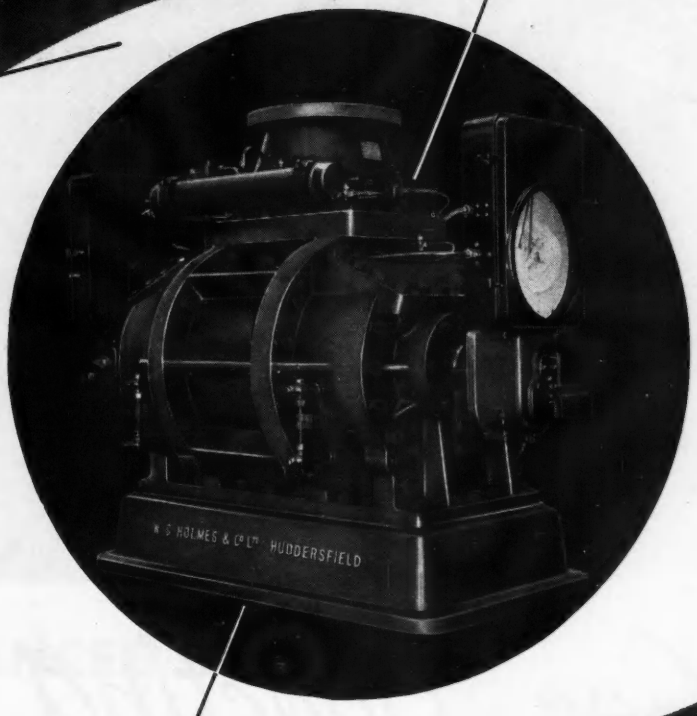
HOLMES



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Are similar in principle to the standard type, but of extra heavy construction to withstand working pressures up to 75 lbs. per sq. in. These meters are fitted with instruments for pressure and temperature correction.

Positive Displacement ensures accurate measurement.

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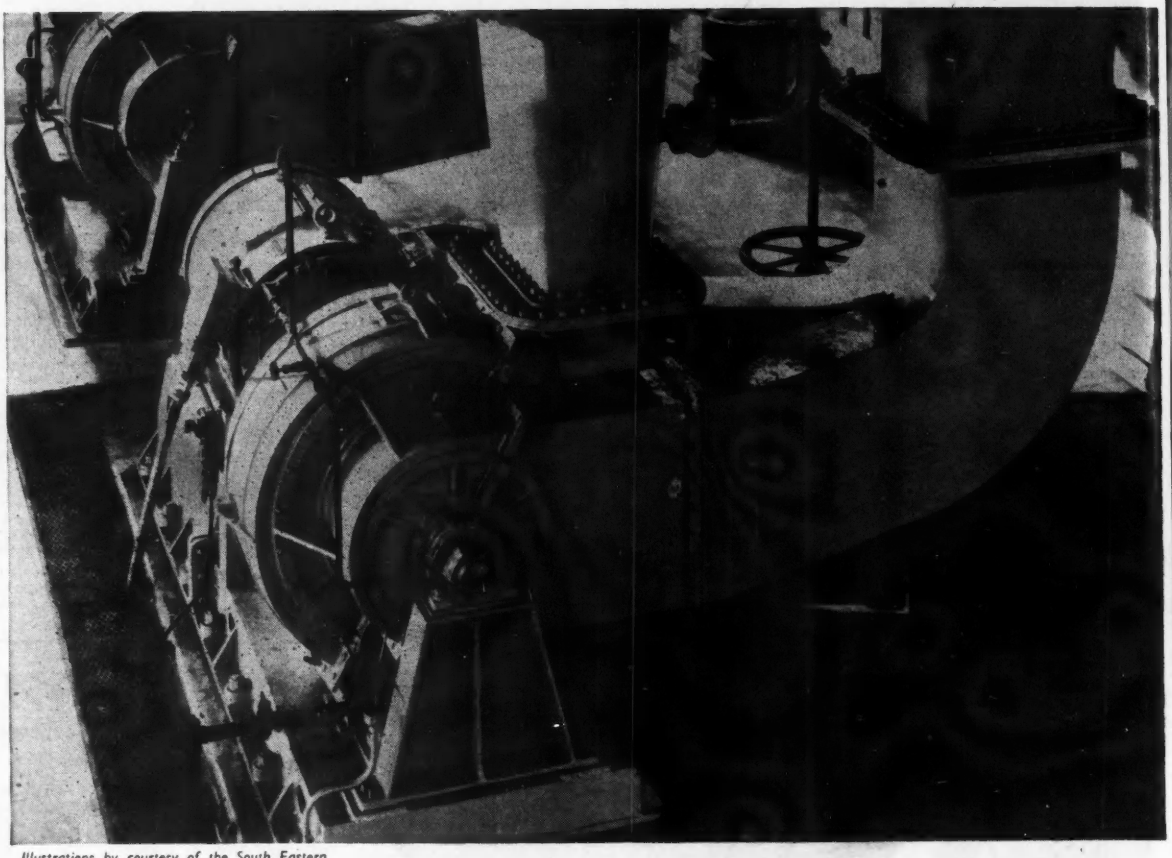
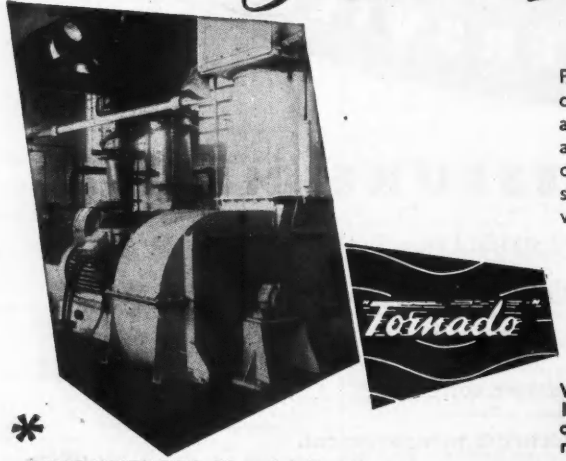


Illustrations by courtesy of the South Eastern Gas Board and Messrs. Humphreys & Glasgow Ltd.

Gas Boosting *



Part of an installation at the East Greenwich Gas Works for the supply of South London's gas are the "TORNADO" gas boosters illustrated above. Each is capable of shifting over a million cubic feet of producer gas an hour, and each was supplied with cast iron gas tight casings with detachable segments for easy servicing, stainless steel impeller and shaft, self aligning roller bearings and flexible couplings. One of the boosters was arranged for motor drive and the other for steam turbine.

FAN ENGINEERING AND INDUSTRIAL GAS EQUIPMENT

We are manufacturing gas boosters which cover a range of from 5,000 to 1,500,000 cubic feet per hour, and if you are concerned with the movement of air or gas, ask us to send you Publication No. 5/8, a survey of the standard range of "TORNADO" high pressure blowing and exhausting fans.

*

LARGE ILLUSTRATION: *42" type 9 double width double inlet gas boosters.*

DUTY: 1,010,000 c.f.h. producer gas at 60°F. Sp.gr. ·907 (air=1) raised to 104°F. saturated giving ·28" w.g. differential over inlet and outlet connections taking 138 H.P.

SMALL ILLUSTRATION: *40" type 15 air blowers.*

DUTY:	*Closed outlet*	*Delivery*
Air quantity	*nil*	*12830 c.f.m.*
Speed r.p.m.	*1480*	*1475*
Static pressure	*15.8" w.g.*	*13" w.g.*
Power absorbed	*13 B.H.P.*	*39 B.H.P.*

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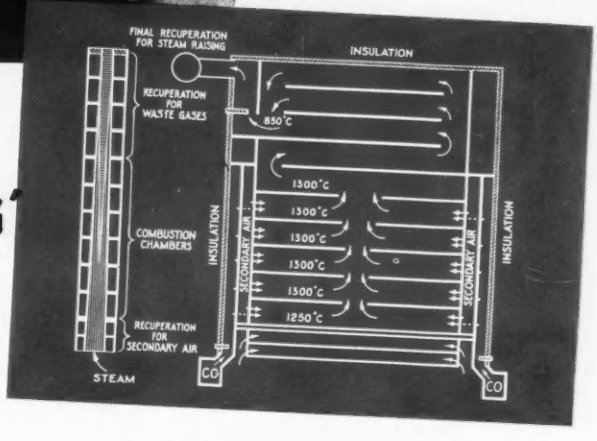
MILL MEAD ROAD, TOTTENHAM, LONDON, N.17

'Phone: Tottenham 4522 (twelve lines) 'Grams: "Keithblac, Norphone, London."

434/8/G

Printed by Straker Brothers Ltd., E.C.2, for Walter King, Limited, 11, Bolt Court, Fleet Street, London, E.C.4. Wednesday, July 2, 1952



'BALANCED HEATING' saves fuel

"Balanced Heating", a feature of the Glover-West continuous vertical system of carbonization, reduces fuel consumption to a level hitherto unobtainable. In the "Balanced Heated" setting, producer gas enters the combustion chambers from *both* sides and retorts are evenly heated by *primary* combustion. Combustion proceeds towards the centre of the setting, heat transmitted to the outer walls being recovered in the producer gas and air uptakes and returned to the system. Control of temperature in individual combustion chambers gives greater flexibility—an important factor today when many different coals are handled by one plant.

★*Illustration shows a "Balanced Heated" setting under construction*

West's Gas IMPROVEMENT CO. LTD.

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